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ECONOMIC INTELLIGENCE WEEKLY REVIEW

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UNCTAD Meeting Glosses Over North-South Differences.....

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Brazil: Future Superpower in Agriculture

Although short-run prospects for export earnings have been dampened by severe drought and sagging world prices for coffee and cocoa, Brazil's agricultural future looks especially bright because of tremendous natural resources and vigorous government development efforts.

Copper: LDC Developments Threaten Established Producers.....

The movement of copper-mining LDCs into the smelting and refining stages foreshadows substantial reductions in the copper industries of the major developed countries.

Soviet Computers: A New Generation Emerges.....

The USSR, while on the threshold of a major new advance in computer technology, will find it extremely difficult to reap short-term economic gains from the breakthrough.

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UNCTAD MEETING GLOSSES OVER NORTH-SOUTH DIFFERENCES

To the surprise of most observers, the meetings of the UNCTAD Trade and Development Board on 6-11 March culminated in a resolution on LDC debt and development that drew plaudits from representatives of the developed and most of the developing countries. The resolution:

- Sets out principles for treating individual debt problems and commits donor countries to consider measures to adjust terms of past aid loans or take other equivalent actions to improve assistance flows.
- Calls for the creation of an intergovernmental group of experts to recommend features of future operations regarding LDC debt.
- Acknowledges that there will be further plenary review of the debt question at UNCTAD sessions in early 1979.

This low-key formulation contrasts markedly with past strident demands of the LDC leadership for universal debt relief.

We believe that the UNCTAD resolution papers over persistent differences within and between the two groups and that these could easily reemerge in further exchanges. The current constructive phase, which will probably last at least until the UNCTAD preparatory meeting of January 1979, is based on an unusual convergence of separate interests in the North-South dialogue.

- As a group, the developed countries appreciate the willingness of the LDCs to avoid rhetoric and to stick to technical discussions on the debt issue.
- Developing country leadership was trying to appear as cooperative as possible to encourage unilateral adjustments by donors of debt terms (or

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other debt-related actions), several of which have already taken place or have been proposed. (U)

Debt at the UNCTAD Meeting

No substantial agreement was reached on the proposals that previously had constituted the basis of group positions. The developing countries had called for generalized debt relief and for the establishment of guidelines that would link eligibility with LDC development goals. The developed countries had tabled a proposal at last spring's Conference on International Economic Cooperation (CIEC) that laid out features to guide the treatment of individual debt problems and had suggested procedures to provide additional external support for low-income LDCs experiencing chronic balance-of-payments problems of which debt is an element. As anticipated, the LDCs still were unable to accept the CIEC proposal. They could not, however, agree among themselves on renewing earlier demands for generalized debt relief and, spurred by opposing pressures within the group, approved a carefully worded compromise, acceptable to developed countries. (C)

The resolution, adopted by consensus, reflects fairly broad acceptance by donor countries of the principle of retroactive terms adjustment, acknowledges that some individual LDCs suffer debts problems and provides for future review of actions taken under the resolution. On the other hand, it lends some support to the developed countries' commitment to case-by-case evaluation of debt situations, distinguishes between debt crises and cases calling for longer term measures, and commits donors only to seek an improvement in net flows of Official Development Assistance (ODA). Most donor countries have stressed that terms adjustment is an aid enhancement, not a debt rescheduling device, and that beneficiaries would be determined within the context of donor country aid programs. The favorable donor country position on terms adjustment was a factor in LDC acceptance of the basic concepts for dealing with future debt problems of individual nations. While the concepts are modest, and in some cases self-evident, they represent a departure from what up to now had been a sterile North-South debate. (C)

Factors Underlying the Joint Resolution

The groundwork for conciliation in both camps was laid by:

LDC differences. Since the original demands of the Manila Declaration of January 1976, the G-77 has successively modified its debt package in attempts to strengthen an elusive consensus. Support for the package varies from moderate endorsement by interested African and South Asian countries

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to open hostility from the Latin American group and others who fear for their credit standing in capital markets. Some of the poorer countries that stand to gain from initial steps toward debt relief are no longer willing to maintain unrealistic postures such as those of the G-77 in debt discussions at the CIEC. In addition, many countries are directing their energies toward other North-South issues, such as the suspended Common Fund talks, recognizing that political and economic gains from the debt discussions may not meet earlier expectations. Stepped-up pressures from such disaffected participants at UNCTAD meetings in December and January shifted the focus of G-77 lobbying toward generalized relief only of official ODA debt for the poorest LDCs. This shift gained momentum because the chairman of the meeting (Sri Lanka) and major spokesmen for the G-77 (Pakistan, Zaire, and Egypt) privately opposed more sweeping demands.

Moves by developed countries. Recent action by individual donors on debt relief measures and the favorable donor-country position on terms adjustment have convinced many LDCs that they are riding a wave of favorable changes in creditor policies that does not preclude future demands. Even before the session, the Netherlands, Sweden, Canada, and Switzerland had moved to cancel debts owed them by this group. The United Kingdom and West Germany, which were already seriously considering some debt measures, as well as Denmark and Belgium, pledged at the March meetings to move forward on selective reajustment of terms.

UNCTAD ambitions. The UNCTAD Secretariat has campaigned vigorously for a larger part in decisions on world economic issues. The failure of last November's Common Fund talks and other North-South discussions has led the Secretariat to seek to enhance its conciliatory role in such exchanges. At a preparatory meeting last December, UNCTAD officials worked hard to identify common points between the developed and developing countries' positions on debt. UNCTAD Secretary General Corea's attempts to persuade disaffected LDCs to send ministers to the March meeting highlighted his desire for positive accomplishments at the debt talks. These efforts at conciliation may have had a substantial influence on some of the poorer African countries.

World economic conditions. Renewed economic growth, relatively stable oil prices, and stronger markets for several important LDC exports have at least temporarily eased balance-of-payments strains in many non-OPEC LDCs since the debt relief demands of 1976. Nonetheless, in view of the substantial debt service payments due this year and next and an expected

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deterioration of the non-OPEC current account, the G-77 will have considerable reason to renew broader demands for debt relief in the near term. (U)

Outlook

This month's meeting leaves uncertain the future role of the debt issue in the North-South dialogue. While the resolution of the UNCTAD Board is the first agreement of its kind in the short history of the North-South debt debate, it leaves untouched a variety of G-77 demands that could be raised in the future: (a) relief of official obligations for each interested LDC, (b) refinancing of commercial credits, (c) readjustment of the terms of multilateral loans, and (d) creation of an international institution specially charged with oversight of work on debt problems. Reemergence of these demands will depend on progress on other issues in the North-South dialogue, the initiatives of developed countries on debt relief outside the UNCTAD setting, and world economic conditions affecting LDC current account positions. (Secret Nofoin)

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BRAZIL: FUTURE SUPERPOWER IN AGRICULTURE

Tremendous natural resources and strong government support for agricultural development should make Brazil the next superpower in world agriculture. Short-run prospects for increased export earnings have been dampened by severe drought and weakening world prices for cocoa and coffee.

Stellar Performance in 1977

Record earnings for coffee, cocoa, and soybeans made Brazil the world's third largest exporter of agricultural commodities in 1977—behind the United States and France. Agricultural sales totaled \$6.7 billion, 55 percent of Brazil's export earnings. Coffee sales reached a peak of \$2.6 billion; soybean and soybean products posted a \$2.1 billion total. Cocoa accounted for another \$530 million and sugar for \$465 million.

Brazil was able to capitalize on strong world markets for coffee and cocoa, while soybeans and soybean product earnings were up due to an ambitious agricultural development program started in the early 1970s. Brazil's continued efforts to become the world's largest cocoa producer sustained production in the face of adverse weather. Expansion of soybean production resulted in a record crop of 12 million tons, nearly eight times the level of 1970. Sugar production reached a new high of 7.5 million tons, while the massive coffee rejuvenation program—begun after the severe

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Brazil: Earnings from Principal Agricultural Exports

Commodity	1976	1977	Million US \$	
			1978	
			Brazilian ¹	CIA ¹
TOTAL	5250	6700	6624	5805
Coffee	2398	2641	3100	2550
Soybeans	1738	2132	1580	1700
Sugar	306	463	450	450
Cocoa	289	531	396	320
Corn	165	136	180	Negl.
Cotton	7	41	100	100
Rice	12	83	75	Negl.
Tobacco	161	186	220	220
Wool	45	53	66	65
Beef	16	40	57	50
Other	113	394	400	350

¹ Projected.

frost in 1975—enabled production to recover to almost double the 1976 output. Wheat production reached a new high of 3 million tons as the government pushed ahead toward its goal of self-sufficiency.

Prospects for 1978

The severe drought that has plagued southern Brazil since the beginning of 1978 threatens to reverse the trend in the 1970s of steadily rising agricultural exports. Wheat production has already slipped because of unfavorable weather, forcing Brazil to boost imports by almost 1 million tons. The corn and rice crops almost certainly are being slashed by drought; export sales from these commodities will be negligible. The reduction in the soybean crop and potential damage to coffee production could be most damaging of all to short-term economic prospects.

The forecast of soybean production has been lowered from 12.5 million tons to the current USDA estimate of 10.5 million to 11.0 million tons. Despite this marked reduction, a jump in world prices is unlikely; the United States had a bumper 1977 soybean crop, Argentine output is up, and US planting intentions for 1978 are higher. Brazil's export earnings from the sale of soybeans and soybean products could drop more than \$400 million compared with 1977.

A continuation of the drought would also hurt coffee earnings. Even though a large reduction in the current crop—below recent estimates of 20 million to 21 million bags—would itself help bolster world prices, the world outlook is dominated by

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decreased consumption and sagging prices. This, coupled with historically low Brazilian stocks, implies that Brazil's coffee sales may be off by about \$100 million in 1978. A prolongation of the drought would curtail Brazil's future production by damaging the younger coffee trees.

Sugar production is likely to reach another new high of 8.9 million tons when the current harvest is completed in April. Although Brazil has the potential to increase exports to 3 million tons, it is limited by an export quota under the International Sugar Agreement. Low sugar prices and the quota limitation will prevent Brazil from increasing sales.

Cocoa production once more has been curbed by inclement weather and probably will remain at last year's level. Lower prices and strong domestic consumption suggest a reduction in export sales by about \$200 million in 1978.

Government Programs to Date

Despite the anticipated cut in agricultural exports in 1978, Brazil's recent agricultural record cannot be matched by any other country. From 1970 to 1977, earnings from agricultural exports rose from \$1.8 billion to \$6.7 billion. Production of soybeans increased nearly sevenfold; cocoa, by 17 percent; corn, by one third; wheat, by nearly 120 percent; and rice by 45 percent. Rapid expansion of the citrus industry enabled Brazil to become the world's largest exporter of frozen concentrated orange juice. Brazil now places second only to the Soviet Union in total sugar output and has maintained its position as the world's largest coffee producer and exporter.

Brazil: Agricultural Production ¹

	Thousand tons					
	Soybeans	Coffee	Cocoa	Sugar	Corn	Wheat
1970.....	1509	643	201	4593	14216	1374
1971.....	2077	1415	182	5117	14130	1844
1972.....	3666	1440	167	5648	14891	2132
1973.....	5012	870	162	6163	14109	691
1974.....	7876	1650	246	6959	16284	1928
1975.....	9892	1380	273	7400	16354	2820
1976.....	10810	557	258	6200	17885	1555
1977.....	12000	1020	235	7500	18800	3000

¹ Production for Brazil's crop year for each commodity ending in year stated.

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25X1A [REDACTED] Several factors account for Brazil's success. Abundant farm land, a favorable climate for growing a wide variety of commodities, and massive domestic and foreign investment in agriculture are important elements. But even more important are the myriad government programs aimed at developing agriculture. The emphasis on agriculture has been especially pronounced during the past two to three years under President Geisel's administration.

Government programs now cover most facets of production and trade, including (a) minimum prices for agricultural products; (b) credit arrangements for production inputs such as seed, machinery, and fertilizer; (c) funding for agricultural research and extension; (d) development of rural infrastructure; (e) tax incentives for production and exports; and (f) export subsidies for certain commodities. The government is also active in regulating exports and export prices for several commodities even though most exports are made by private companies or cooperatives.

Government involvement in agricultural development is best illustrated by the magnitude of the increase in agricultural credits. In 1974, credit for the agricultural sector totaled \$6.5 billion; by 1976, this amount had more than doubled, to \$13.5 billion. During the same period, annual fertilizer usage increased from 1.4 million tons to 2.3 million tons, largely because of increased availability of credit.

Although crop yields have risen slightly, production increases have occurred largely through the rapid expansion of farmland. Area planted to grains and soybeans increased from 29 million hectares in 1970 to 39 million hectares in 1977. Soybean plantings alone increased by 5.6 million hectares. Most of this increase resulted from the development of new lands in southern Brazil. Sugarcane planted area has doubled, with expansion occurring largely in the northeast where a doubling of cocoa plantations is also under way.

The availability of new land in southern Brazil is rapidly diminishing. Development of the Cerrados, Brazil's central plateau region, is now progressing. Government efforts in this area include an initial investment of \$1.6 billion to develop 3.7 million hectares for production of wheat, corn, coffee, and soybeans. This project could add an additional 40 percent to soybean planted area.

Government Targets Ahead

Current government policies will sustain the strong push for agricultural development and diversification, with the major emphasis on soybeans. A large portion of the Parana coffee area destroyed by frost has already been planted to soybeans, and additional large tracts will be planted as part of the massive

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development program for the central plateau. If the soybean component of the project succeeds, Brazil will produce 20 million tons of soybeans by 1985. The loss of the Parana coffee area is being offset by extensive plantings elsewhere of high-yielding varieties; new plantings are mainly in frost-free areas.

Brasilia is also emphasizing the expansion of sugar and cocoa production. An ambitious development program begun in the early 1970s should raise sugar production to 10 million tons by 1980. This expansion will support a major program to convert sugar to alcohol for use in automobile engines. This program, to cost \$1.6 billion in its initial stages, is to result in the annual product of 4 billion liters of alcohol (the equivalent of 43,000 b/d of oil) to help reduce Brazil's oil import bill. In addition, Brazil hopes to expand its role as a major sugar exporter by exploiting its new export quota of 2.35 million tons under the International Sugar Agreement. Brazil's exports of sugar averaged only 1.7 million tons in 1974-76.

Another goal of the Brazilian government is to become the world's largest cocoa exporter by 1990. Brazil now ranks as the world's number two producer along with the Ivory Coast, behind Ghana. A total of \$41 million was spent on cocoa research, extension, and infrastructure development in 1975, and sizable sums probably were spent in 1976 and 1977. Credit extensions to cocoa producers totaled almost \$100 million in 1975. Successful development of the Amazon Valley and rejuvenation of production in the traditional producing area of Bahia could result in a cocoa crop of 700,000 tons by 1990 compared with production of 235,000 tons in 1977.

Considerable attention has also been paid to expanding production of grain crops. The government views increases in corn and rice output as necessary to meet expanding domestic needs as well as to garner large foreign exchange earnings. As for wheat, the goal is to attain self-sufficiency in the next five years. We doubt this can be achieved, given the continued strong increase in domestic consumption.

Implication of Agricultural Development

Brazil will expand its position as a major competitor of the United States in agricultural exports and as a key supplier of US agricultural import needs. Barring major crop failures, Brazil will cut into US export sales of soybeans and products; increases in this world market share could be tempered by higher domestic demand. Brazil probably must face up to greater import demand for wheat as the government's drive for self-sufficiency in wheat production runs into domestic opposition because of the lower cost of imported wheat. As for the traditional export crops, the coffee industry will become even more influential in international markets since both world and Brazilian stocks are at historic lows. Brazil also is in a strong position to achieve its

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goal of becoming the number one cocoa exporter by 1990. Brazilian emergence as a spokesman for LDC commodity producers foreshadows more frequent confrontations with the United States over international commodity issues. (Confidential)

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COPPER: LDC DEVELOPMENTS THREATEN ESTABLISHED PRODUCERS

25X1A [REDACTED] The expansion of smelting and refining stages in the copper mining LDCs foreshadows reductions in the copper industries of the major developed countries. Producers in these countries are faced with sky-rocketing pollution abatement costs, high wage bills, slow product demand growth, and rising imports of cheaper LDC refined copper. Phaseout of capacity in some of the major industrial countries, including the United States and Japan, could be moderated by protectionist measures and/or relaxation of environmental constraints.

Market Depressed

Refiners in developed countries are whipsawed by weak demand, world overcapacity, record stocks, and low prices. Free World consumption of refined copper has never returned to the record high of 6.9 million tons of 1973; meanwhile capacity has increased by 1.3 million tons. The world market price in the London Metal Exchange (LME) has fallen by more than 50 percent, from a record \$1.38 per pound in April 1974 to less than 60 cents, while stocks of refined copper have risen to a record 2 million plus tons. The effects of the depressed market since 1973 on the US industry have been particularly severe: (a) production is down 18 percent since 1974, (b) consumption is down 20 percent, (c) exports are down 41 percent, and (d) imports are up 91 percent.

Market Structure

Fifteen nations account for 90 percent of Free World copper mining and refining:

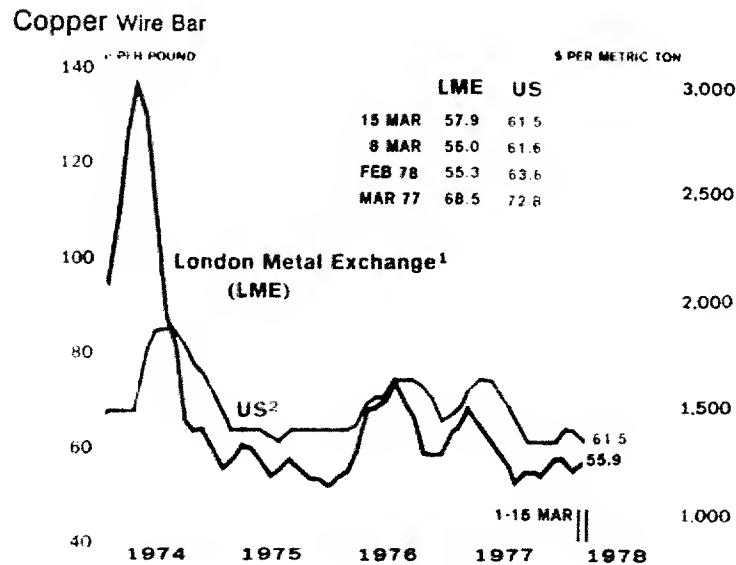
- The United States is by far the largest producer, mining and refining about one-quarter of total output. Although self-sufficient in terms of capacity, the United States usually imports about 10 percent of its annual consumption of refined copper.

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• Six LDCs—Chile, Peru, Zambia, Zaire, the Philippines, and Papua New Guinea—account for nearly one-half of Free World mine output (copper content) and one-quarter of refined output. The six export most of their production to developed countries, shipping concentrates and blister copper as well as refined copper.

• Canada, Australia, and South Africa together mine more than 20 percent of Free World copper and refine about 12 percent. Approximately two-thirds of their output is refined domestically and the rest is exported to other developed nations for refining. The three consume about one-half of their refined output and export the remainder.

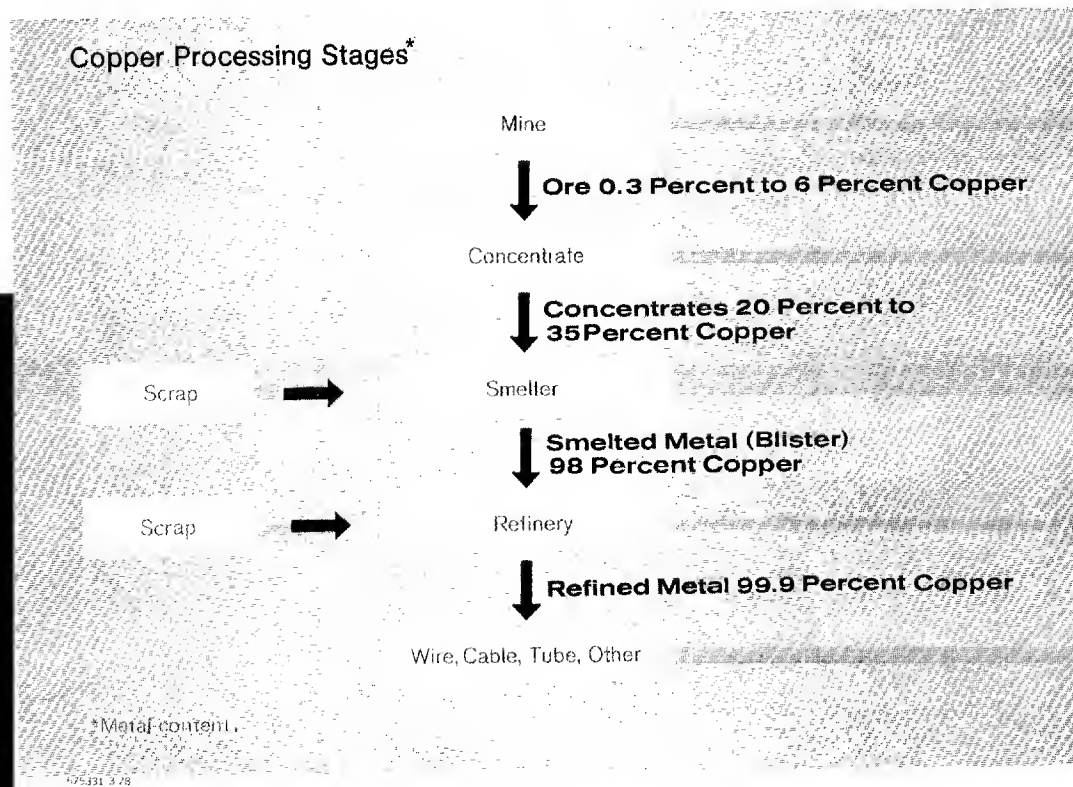
• Four developed countries—Japan, Belgium, West Germany, and the United Kingdom—mine almost no copper but refine 30 percent of Free World output. Their inputs are obtained from the six copper exporting LDCs, Canada, and South Africa. All except Belgium consume their entire refined output.

The Appeal of Vertical Integration

LDCs view expansion of their smelting and refining stages as an attractive means of increasing their export earnings and developing their industrial base. Vertical

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integration is facilitated by low investment costs and high value added. Ore producing LDCs find that a small additional investment of \$2,500 per ton in smelting and refining capacity can expand the value of product by about one-third. This gain, coupled with the richer ore bodies, cheaper labor, and fewer environmental constraints, is attracting foreign capital to the LDCs.



Status of the Major LDC Exporters

The degree of present LDC vertical integration varies: the Philippines and Papua New Guinea process some of their mine output through the concentrate stage and export both ores and concentrates. At the other extreme, Zambia exports nearly all of its output as refined copper.

Peru possesses enormous copper reserves and has an ambitious expansion program, which eventually will make it one of the world's largest copper producers. In November 1976 the new Cuajone mine began producing at an annual rate of 150,000

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Free World: Trade in Refined Copper

	Thousand Tons			
	1973	1974	1975	1976
Total exports	2,543.0	2,788.8	2,498.7	2,620.4
LDCs	1,320.7	1,433.2	1,397.7	1,532.6
Chile	387.8	487.8	504.2	594.7
Peru	27.0	38.5	36.9	122.1
Zambia	672.1	649.8	616.1	712.4
Zaire	229.2	252.0	224.0	74.0 ¹
Other	4.6	5.1	16.5	29.4
Developed countries	1,222.3	1,355.6	1,099.0	1,087.8
Australia	48.2	70.5	91.5	76.2
Belgium	319.4	288.9	248.6	307.5
Canada	290.0	282.8	319.6	313.2
Japan	24.1	278.5 ²	21.7	29.3
South Africa	27.5	15.2	26.6	34.6
United Kingdom	66.1	35.0	15.7	12.3
United States	173.3	113.3	156.2	102.3
West Germany	119.5	116.0	97.3	66.3
Other	154.2	155.4	121.8	146.1
Total imports	2,627.4	2,712.8	2,330.7	2,727.3
LDCs	209.0	230.1	190.4	236.2
Developed countries	2,418.4	2,482.7	2,140.3	2,491.1
Belgium	214.1	187.8	187.9	302.2 ¹
Japan	314.0	230.2	168.0	200.5
United Kingdom	399.2	380.9	369.4	367.9
United States	181.4	275.7	132.4	346.1
West Germany	414.4	449.8	404.9	409.7
Other	895.3	958.3	877.7	864.7

¹ Because of fuel shortages in 1976, Zaire exported most of its blister copper to Belgium for refining.

² Japan's large exports in 1974 were made to reduce heavy inventories.

tons. Output from this mine added an estimated \$175 million to foreign exchange earnings in 1977. The Ilo refinery came onstream in mid-1976 with a capacity of 150,000 tons. Ilo's capacity will be doubled by early 1979. Approximately 16,000 tons will be added to the capacity of the La Oroya refinery in 1978, raising Peru's refinery capacity to 366,000 tons. When a new 170,000-ton-smelter now under construction at Cuajone is completed, Peru will smelt and refine practically all its mine output.

Chile, possessor of the world's largest copper resources, can produce at the present annual rate of 1 million tons for 150 years. At the present, Chile smelts about 85 percent of mine output and refines about 65 percent. A small expansion of existing mines is planned, and a new 100,000-ton refinery is under consideration.

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25X1A [REDACTED] *Zaire* mines about 500,000 tons of copper annually, smelts 450,000 tons, and refines 250,000 tons. Most of its smelted copper and leach cathodes are exported to Belgium for further refining.

Zaire plans to construct a 100,000-ton refinery in Maluku at a cost of \$460 million and a smelter of equal size. The refinery could be completed by 1980 and the smelter several years later. Eventually the size of the refinery is to be doubled. Even so, Zaire will refine only 70 percent of the present level of mine output and considerably less if plans to expand mine output to 800,000 tons are carried out.

Zambia refines its entire mine output of 700,000 tons per year. Plans to expand are limited to a small electrowinning refinery of about 20,000 tons, which could be onstream by mid-1980. The plant will cost \$134 million.

The *Philippines* mine 230,000 tons of copper annually, exporting ores and concentrates. Vertical integration plans have been cut back to one 84,000-ton smelter, scheduled for completion in 1980 at an estimated cost of \$220 million. This smelter will be able to process only about 40 percent of concentrate output. Construction of a refinery is still under consideration.

Papua New Guinea mines 180,000 tons of copper annually which it processes through the concentrate stage. Concentrates are exported to Japan and West Germany for smelting and refining. No smelters or refineries are planned at the present time.

Competitive Advantage

Pollution abatement requirements and rising operating costs in the major industrial countries have widened the LDC edge in the smelting and refining stages. Pollution control programs have raised the costs of smelting and refining by as much as 16 cents a pound—about 30 percent of the present LME price of refined copper.

The LDCs are exploiting their cost advantage by maintaining output at capacity levels and underpricing old-line producers in certain markets. US producers have been especially hard hit; US imports rose to record levels in 1976 and rose again in 1977, keeping capacity utilization below 70 percent.

Outlook

LDC copper producers will maintain their competitive edge into the 1980s. However, their profits will be checked by continued low prices and slow growth in product demand.

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During 1978-80, completion of refineries now under construction will raise world capacity by more than half a million tons, or by about 10 percent. Most of the new capacity will be in the LDCs, with Peru adding 200,000 tons and Mexico and Iran each adding 150,000 tons. By 1980, Mexico and Iran will join the ranks of copper exporting nations.

Free World: Copper Production Capacity

	Thousand Tons (Contained Metal)		
	1970	1975	1980 (Projected)
United States			
Mine	2,000	2,000	2,100
Smelter	1,850	2,065	2,065
Refinery	2,425	2,640	2,640
Developed countries exporters ¹			
Mine	1,170	1,640	1,760
Smelter	945	1,170	1,170
Refinery	785	920	1,080
LDCs exporters ²			
Mine	2,720	3,565	4,075
Smelter	2,370	2,775	3,035
Refinery	1,630	1,860	2,645
Developed countries producers ³			
Mine	130	85	85
Smelter	1,000	1,650	1,660
Refinery	1,850	2,340	2,435

¹ Canada, Australia, and South Africa.

² Chile, Peru, Zambia, Zaire, Philippines, and Papua New Guinea. In 1980 the six major LDC exporters will be joined by Mexico and Iran with a total refinery capacity of 390,000 tons.

³ Japan, Belgium, West Germany and the United Kingdom.

As for 1981-85, announced plans call for about 650,000 tons of additional refining capacity, all to be added to LDCs. Although these plans are tentative and may be raised or lowered as market trends become clearer, they suggest that no sudden tightening in the copper market is likely.

We expect exports of refined copper to the industrial countries to increase as vertical integration continues. The developed countries thus face some hard choices:

- To allow market forces to phase out a substantial portion of the domestic copper industry.
- To establish protectionist measures.

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- To improve the competitive position of the domestic industry by relaxing environmental constraints. (Unclassified)

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SOVIET COMPUTERS: A NEW GENERATION EMERGES

The USSR, while on the threshold of a major new advance in computer technology, will find it extremely difficult to reap short-term economic gains from the breakthrough.

The RYAD-II, a new family of data processing computer systems patterned after the IBM 370, is now going into production. RYAD-II computers will be faster and much more versatile than the models being replaced and will be able to use IBM 370 software. The USSR, however, cannot achieve the full capabilities of the RYAD-II without advanced integrated circuits from the West. These could become available later this year if current proposals for the relaxation of embargo restrictions are adopted. The need for high-grade associated software and technical manpower, as well as the ineffective employment of advanced computers at the enterprise level, will limit the usefulness of the RYAD-II for a long time.

The Setting

The CEMA-wide program to build the RYAD series computers—the first modern Soviet computers designed specifically for data processing—was beset throughout the Ninth Five-Year Plan period (1971-75) with design and production difficulties. Production grew from a few prototypes in 1971 to an estimated 900 units in 1975; total output was only 10 to 15 percent of what had been anticipated, however, and included only the smaller, less powerful ES-1020 and ES-1030 models—both markedly inferior to their Western counterparts in reliability and performance.

By 1976, mainly because of increased domestic production of improved semiconductor components, these basic RYAD models had been modified, upgraded, and redesignated as the ES-1022 and ES-1033. The new RYAD-Is are nonetheless still limited in their performance characteristics and are soon to be superseded by RYAD-IIs.

Technology Gap

The RYAD-II program has moved along rapidly since it was first announced in late 1974. Development cycle time—measured from the first announcement of

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planned development to the date of the first production prototype—took about three years for the RYAD-II, compared with about five years for the RYAD-I. Nevertheless, the technological gap with the United States, as represented by IBM, has stayed at about seven years. In fact, the gap is much greater when the full range of equipment being produced by both sides is considered. IBM in its 360- and 370-series machines offers a complete line of computer sizes, including some very large, fast models. RYAD-I production, in contrast, consisted of only the smaller sizes, with the larger models only now entering series production.

New Models Advance ...

The Soviets claim that two RYAD-II models are now going into production, the small ES-1035 and the much more powerful ES-1060. The latter computer, however, was under development for the original RYAD-I program and is not a complete new design. The only other RYAD-II model that is likely to go into production during the current Plan period (1976-80) is the ES-1055, being developed by East Germany.

The ES-1035 is in the very early stages of production in the USSR. A few prototype machines have been made, tested, and accepted by the CEMA evaluation committee. The Minsk Computer Plant, the largest producer of computers in the USSR, is now making preparations for series production. During the transition phase at Minsk, which could last until 1979, RYAD-Is (ES-1022s) will continue to be produced along with the RYAD-IIs (ES-1035), thereby avoiding a sharp drop off in total Soviet and East European production of RYADs. By 1980, RYAD-IIs should constitute about one-half of total RYAD production.

RYAD-II production is going ahead even though the critical semiconductor memory components are not yet available from the domestic electronics industry. Semiconductor memory—a memory built out of high-density integrated circuits (IC) with an information storage capacity of about one thousand bits of information on each IC—is a key feature that distinguishes the technology of RYAD-II from RYAD-I. Although by current Western standards this level of density is low (off-the-shelf memory components in the West have 16 times as much capacity), it nonetheless represents a giant advance for the RYAD program. Semiconductor memory will permit the USSR to double the memory size of the RYAD-I in one-fourth of the space, while substantially increasing the speed of memory operations. Greatly increased memory size makes it possible to (a) handle much larger programs and more than one program at a time and (b) attach remote terminals for time sharing. These characteristics would provide the USSR with its first true capability for computer-to-computer communications.

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Neither the USSR nor any of the other East European participants in the RYAD program has yet demonstrated a capability to produce ICs of the required density. The highest density IC in production in the USSR is a 64-bit device; even these are scarce, and shortages have caused delays in the production of RYAD-Is. To compress development time, the Soviets are attempting to copy several high-density devices manufactured by US firms.

Soviet designers, apparently uncertain about when the new component technology will become available, have designed RYAD-II memories to employ the traditional magnetic core technology. Use of this technology, however, will curtail the number of new features of the RYAD-II and greatly reduce overall system performance. In particular, it would be difficult to use the RYAD-IIs to establish large computer networks.

... But Questionable Impact

RYAD-IIs will have little short-run economic impact. First, the increased speed and capacity of RYAD-IIs raises the performance requirements of associated hardware to levels that, in some cases, are beyond the reach of current Soviet technology. The smaller RYAD-IIs will require disc drives with a capacity (30 megabytes) four times greater than those now being produced in the USSR. It is not clear if Bulgaria, which has mastered production of such drives, will be able to supply large-scale Soviet needs. The larger RYAD-II models will require disc drives of a capacity (100 megabytes) far beyond the current manufacturing capability of any Communist producer.

Second, RYAD-IIs will require higher professional skills from systems analysts, programmers, and service personnel. Programs to meet these manpower needs are proceeding with far lesser priority than production.

Third, RYAD-IIs are likely to encounter the same problems in allocation and use that have curtailed the effectiveness of RYAD-Is. Many enterprises have overordered RYADs, failed to train personnel in their use, and have shown monumental indifference to their care and maintenance. M. Ya. Rakovskiy, Deputy Chairman of Gosplan, recently complained of "frequent cases where the machines are kept in a storehouse, and sometimes under the open sky, still in a crate, for 4 to 6 months and even longer."

Finally, RYAD-IIs offer the typical industrial facility few advantages over RYAD-I and seem better suited for data processing at higher levels—the production association, the Ministry, and regional and national planning bodies. Even in the latter

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uses, potential effectiveness awaits the development of appropriate software and complex data transmission systems.

Policy Implications

To realize the full capabilities of RYAD-II computers, especially the time-sharing feature, the Communist countries will have to turn to the West for the required integrated circuits. As precedent, the East Germans used Western ICs entirely in the first few units of their RYAD-I model and continue to use some Western ICs.

The ICs needed for the semiconductor memory in RYAD-IIs are controlled by COCOM. Even so, substantial quantities of these components have been acquired by the USSR and East European countries. These acquisitions have allowed RYAD producers to design exact physical and performance copies of the Western parts and, probably, to use them in prototype RYAD-IIs.

The supply of Western memory ICs through illegal channels is neither adequate nor sufficiently dependable for use in series-produced RYAD-IIs. Later this year, however, COCOM will consider relaxing controls on ICs to a level that would permit free export of the needed Western memory components to Communist countries. The USSR and East European countries would become large purchasers until high-volume domestic production is achieved.

Soviet military authorities have been directly involved in the RYAD production program and are important users. RYAD-Is are employed in military-space research institutes and in plants producing military hardware. The more versatile and larger-capacity RYAD-IIs would strengthen these military applications. Also, the networking and time-sharing features of RYAD-II will permit more sophisticated military command and control, automated air traffic control, and strategic planning and targeting. (Confidential NoFORN)

Publication of Interest*

China: The Nonferrous Metals Industry in the 1970s
(ER 78-10104, March 1978, Secret NoFORN-Nocontract)

This research paper analyzes China's nonferrous metals industry in terms of production trends, technological development, and international trade.

* Copies of this publication may be ordered by calling Joyce Alessandrini, telephone 351-5203.

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National
Foreign
Assessment
Center

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Economic Indicators Weekly Review

23 March 1978

*ER EI 78-012
23 March 1978*

Approved For Release 2002/01/30 : CIA-RDP79T01316A001000040010-5

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FOREWORD

1. The **Economic Indicators Weekly Review** provides up-to-date information on changes in the domestic and external economic activities of the major non-Communist developed countries. To the extent possible, the **Economic Indicators Weekly Review** is updated from press ticker and Embassy reporting, so that the results are made available to the reader weeks—or sometimes months—before receipt of official statistical publications. US data are provided by US government agencies.

2. Source notes for the **Economic Indicators Weekly Review** are revised every few months. The most recent date of publication of source notes is 16 February 1978. Comments and queries regarding the **Economic Indicators Weekly Review** are welcomed.

BIG SIX FOREIGN COUNTRIES COMPOSITE INDICATORS

Industrial Production

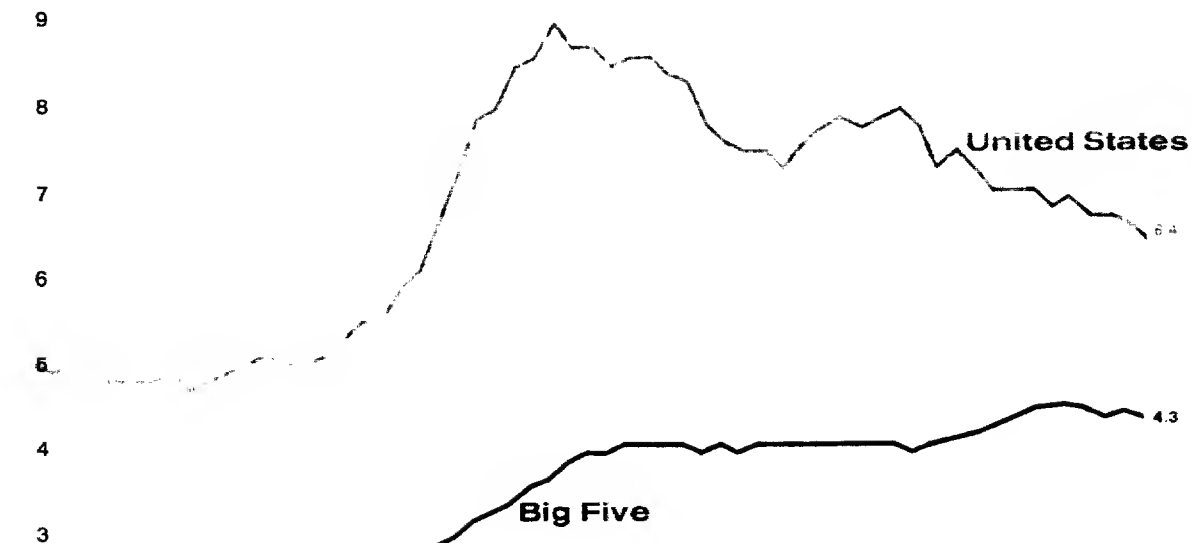
INDEX: 1970=100, seasonally adjusted

Semilogarithmic Scale



Unemployment Rate

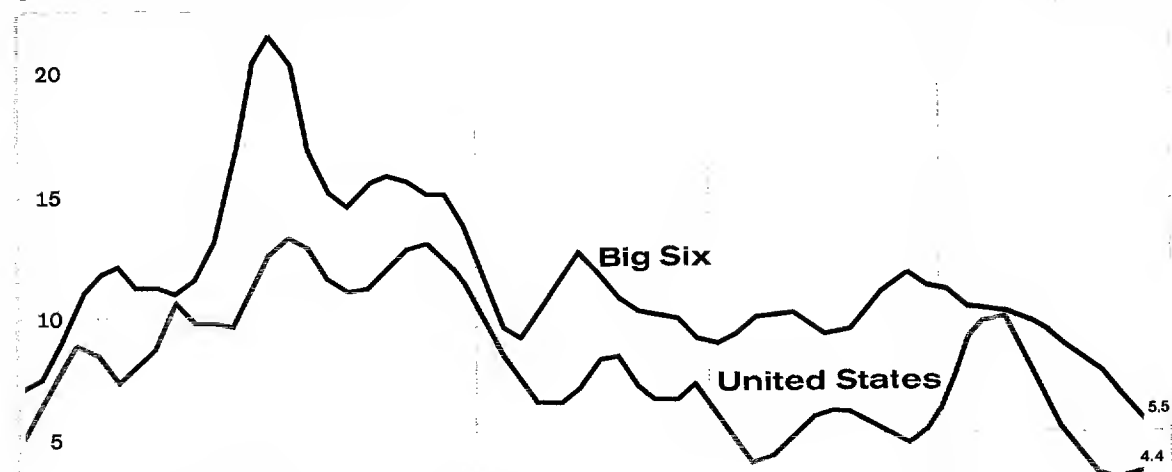
Percent



Note: Excluding data for Italy.

Consumer Price Inflation

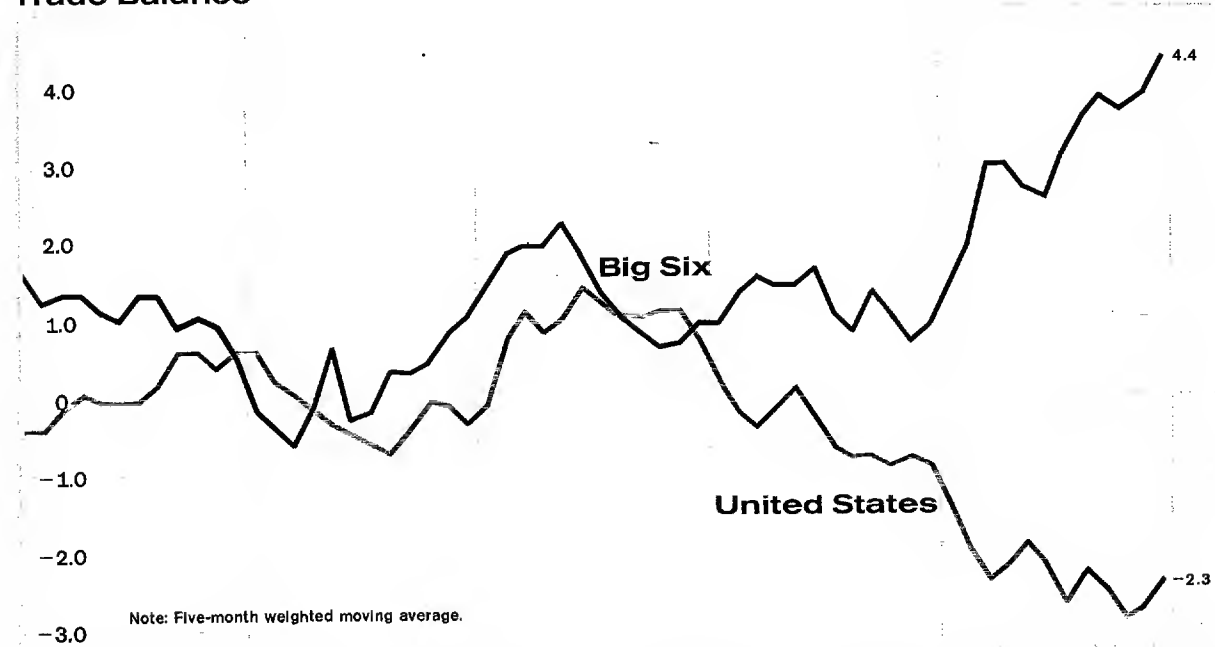
Percent, seasonally adjusted, annual rate



Note: Three-month average compared with previous three months.

Trade Balance

Billion US \$, f.o.b., seasonally adjusted



Note: Five-month weighted moving average.

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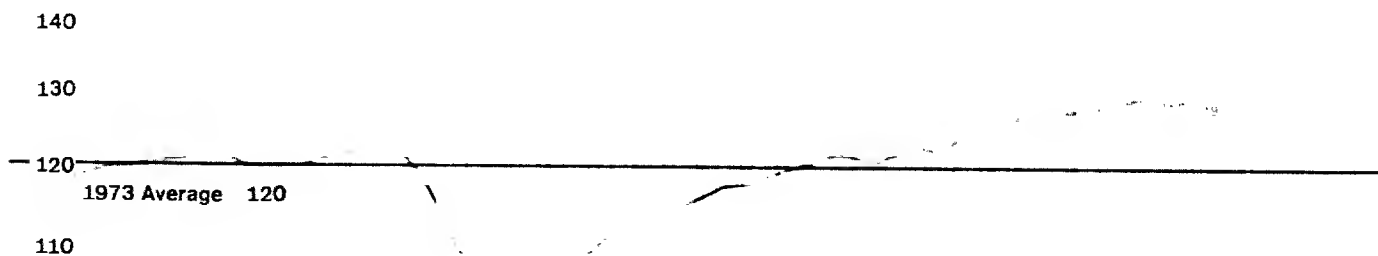
1973 1974 1975 1976 1977 1978

	LATEST MONTH	Percent Change from Previous Month	AVERAGE ANNUAL GROWTH RATE SINCE 1970			Unemployment Rate Big Five United States	LATEST MONTH			LATEST MONTH	MILLION US \$	CUMULATIVE (MILLION US \$)		
			1970	1 Year Earlier	3 Months Earlier ²		DEC 77	4.3	3.9			1977	1976	Change
Industrial Production														
Big Six	DEC 77	0.3	2.9	0.9	5.3									
United States	DEC 77	0.2	3.5	4.9	2.4									
Consumer Prices														
Big Six	DEC 77	0.5	9.4	7.8	5.5									
United States	DEC 77	0.5	6.5	6.8	4.4									
Trade Balance														
Big Six	DEC 77						DEC 77	4,824	37,242	16,562	20,680			
United States	DEC 77						DEC 77	-2,116	-26,490	-5,635	-20,855			

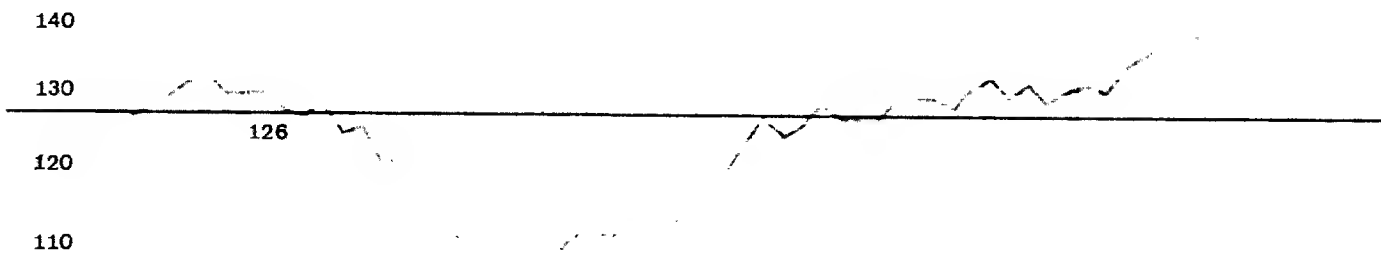
INDUSTRIAL PRODUCTION INDEX: 1970=100, seasonally adjusted

United States

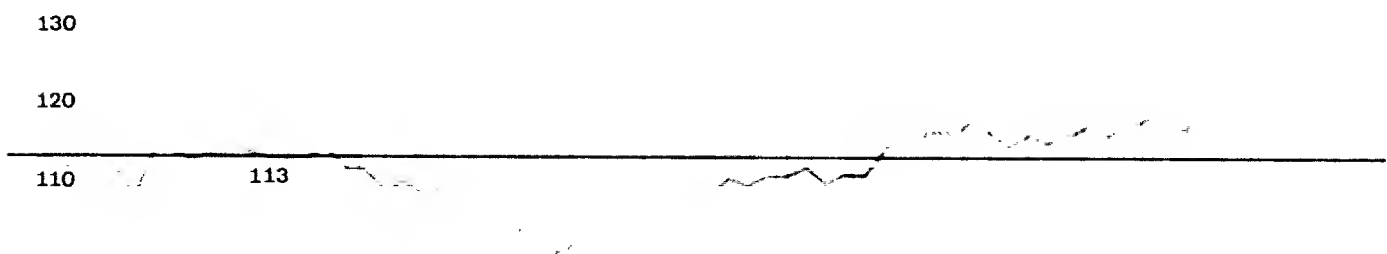
Semilogarithmic Scale



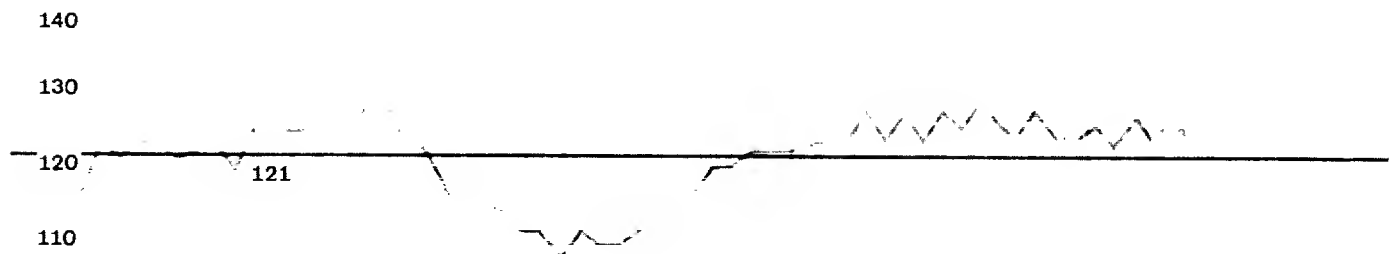
Japan



West Germany



France



United Kingdom

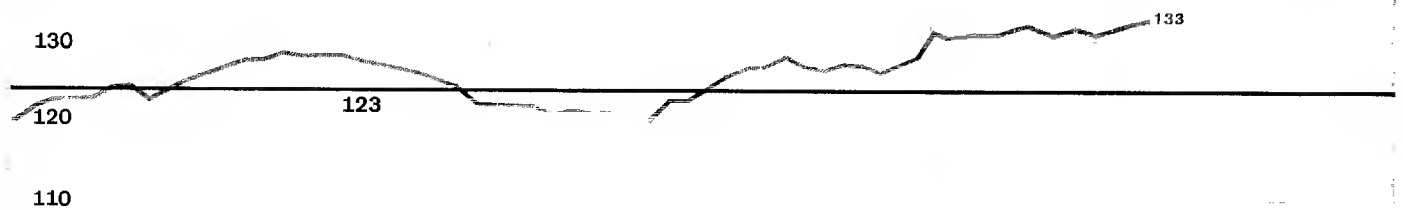
Semilogarithmic Scale



Italy



Canada



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1973 1974 1975 1976 1977 1978

	LATEST MONTH	Percent Change from Previous Month	AVERAGE ANNUAL GROWTH RATE SINCE				LATEST MONTH	Percent Change from Previous Month	AVERAGE ANNUAL GROWTH RATE SINCE		
			1970	1 Year Earlier	3 Months Earlier ¹				1970	1 Year Earlier	3 Months Earlier ¹
United States	FEB 78	0.4	3.4	4.5	0.7	United Kingdom	DEC 77	1.4	0.4	-1.2	-4.3
Japan	JAN 78	1.0	4.2	5.5	15.7	Italy	JAN 78	4.5	3.3	-3.5	25.5
West Germany	DEC 77	1.7	2.4	2.6	4.7	Canada	DEC 77	0.2	3.9	3.6	2.9
France	DEC 77	-3.1	2.8	-1.6	-1.1						

UNEMPLOYMENT RATE

PERCENT

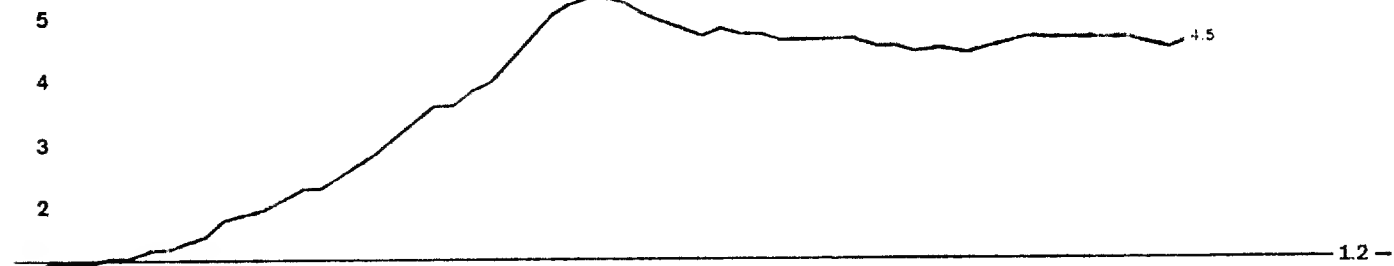
United States



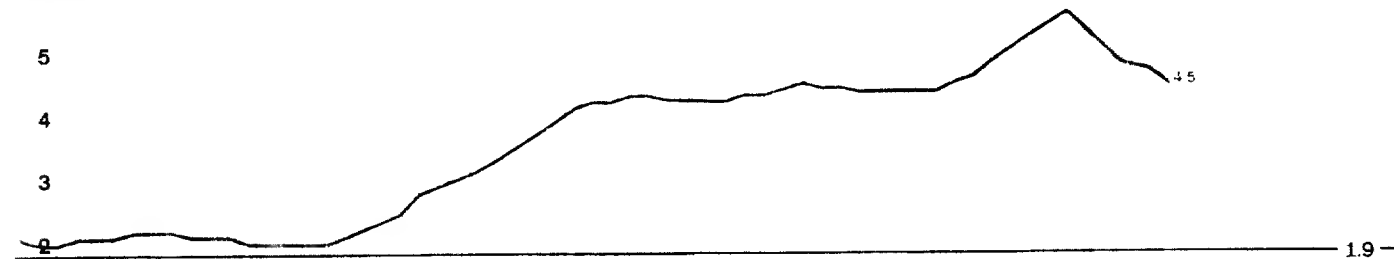
Japan



West Germany

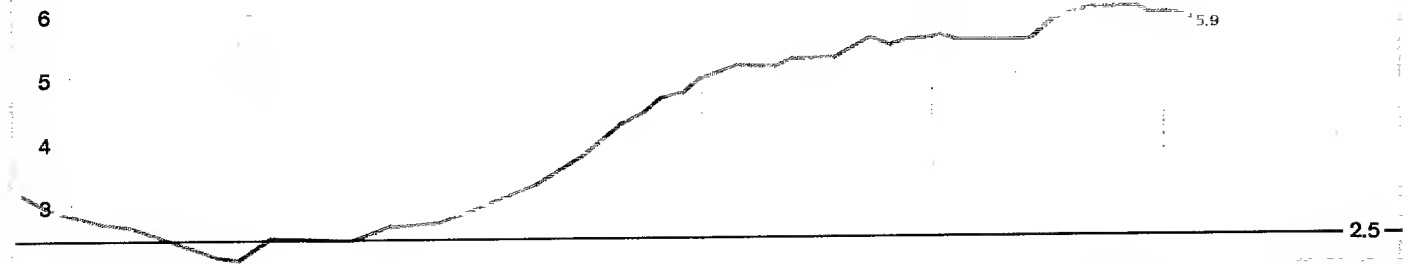


France



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1973 1974 1975 1976 1977 1978

United Kingdom

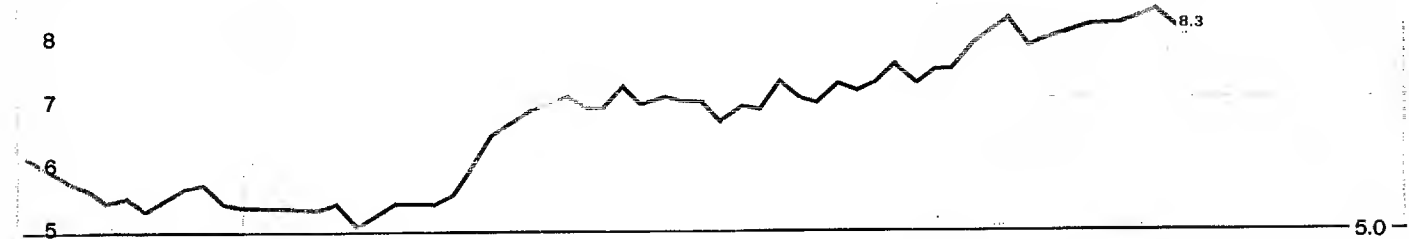


Italy (quarterly)



A labor force survey based on new definitions of economic activity sharply raised the official estimate of Italian unemployment in first quarter 1977. Data for earlier periods thus are not comparable. Italian data are not seasonally adjusted.

Canada



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1973 1974 1975 1976 1977 1978

THOUSANDS OF PERSONS UNEMPLOYED

		LATEST MONTH	1 Year Earlier	3 Months Earlier		LATEST MONTH	1 Year Earlier	3 Months Earlier
United States	FEB 78	6,090	7,183	6,818	United Kingdom	FEB 78	1,409	1,331
Japan	DEC 77	1,180	980	1,130	Italy	77 IV	1,598	777
West Germany	FEB 78	1,022	1,007	1,031	Canada	JAN 78	891	780
France	JAN 78	991	945	1,100				886

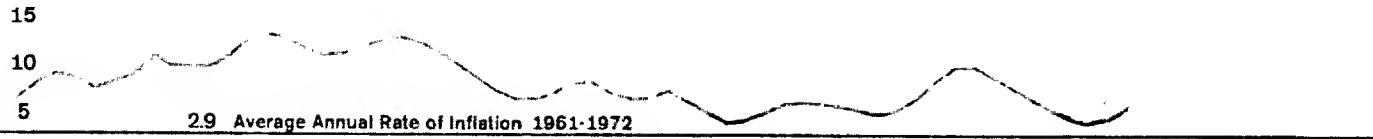
NOTE: Data are seasonally adjusted. Unemployment rates for France are estimated. The rates shown for Japan and Canada are roughly comparable to US rates. For 1975-78, the rates for France and the United Kingdom should be increased by 5 percent and 15 percent respectively, and those for West Germany decreased by 20 percent to be roughly comparable with US rates. Beginning in 1977, Italian rates should be decreased by 50 percent to be roughly comparable to US rates.

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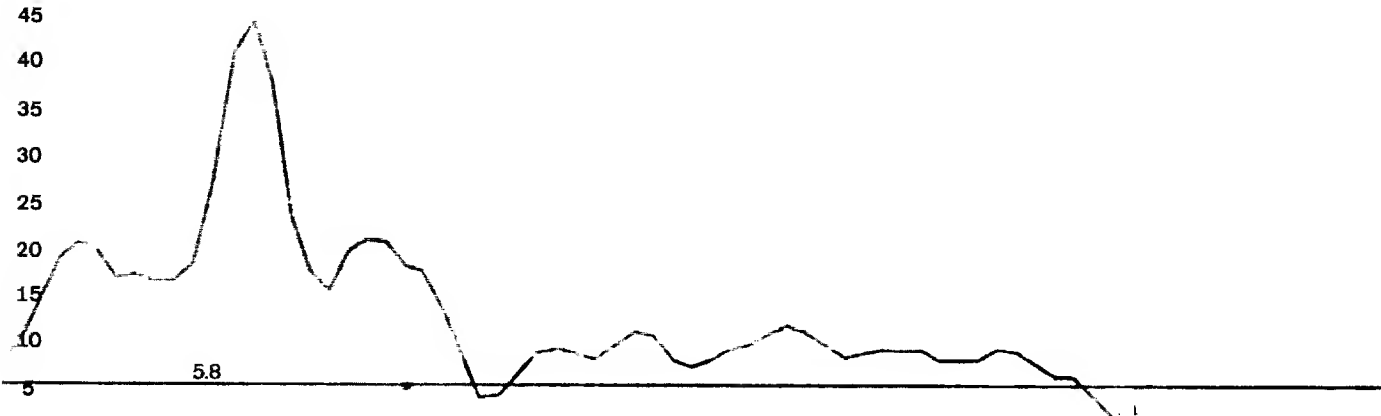
CONSUMER PRICE INFLATION

Percent, seasonally adjusted,
annual rate¹

United States



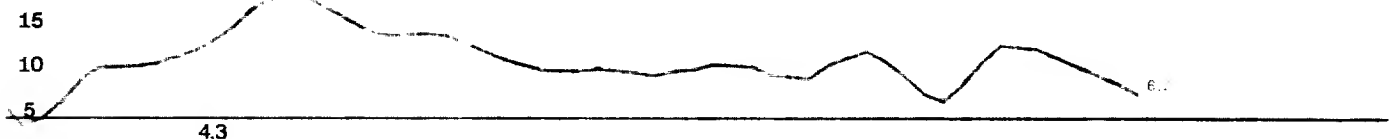
Japan



West Germany



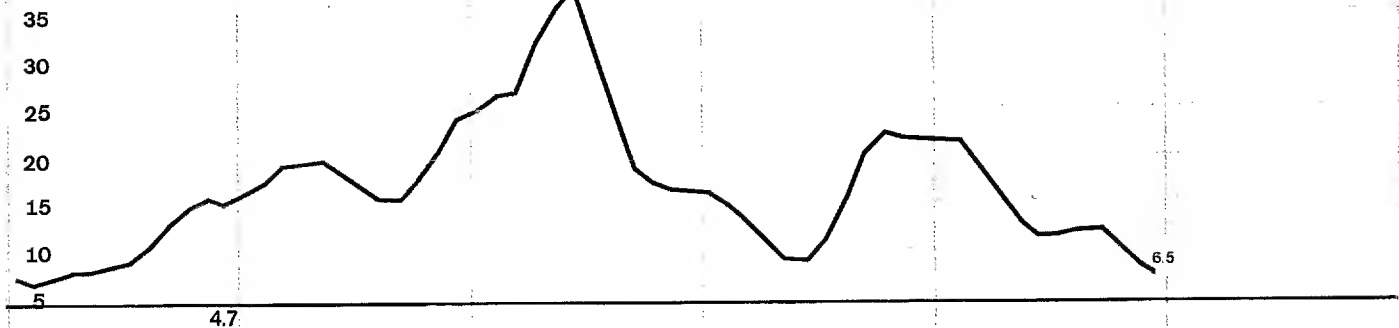
France



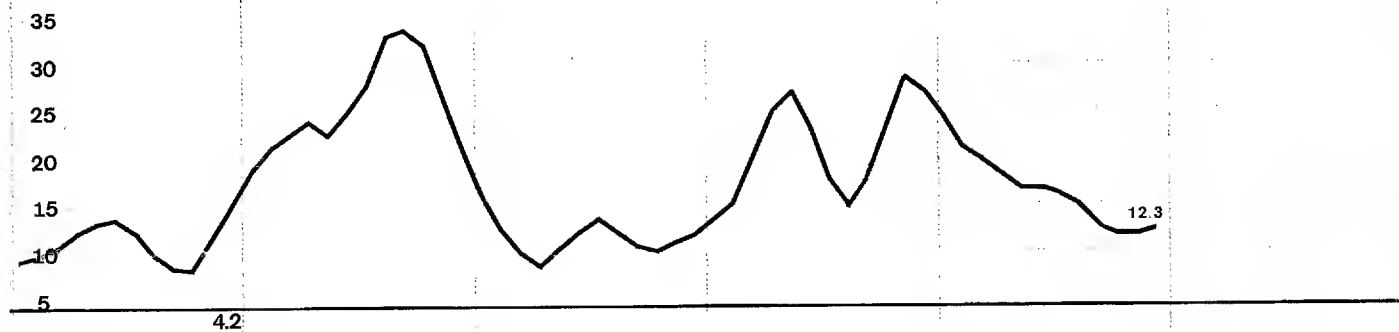
JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT
1973 1974 1975 1976 1977 1978

¹Three-month average compared with previous three months.

United Kingdom



Italy



Canada



JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT
1973 1974 1975 1976 1977 1978

	LATEST MONTH	Percent Change from Previous Month	AVERAGE ANNUAL GROWTH RATE SINCE				LATEST MONTH	Percent Change from Previous Month	AVERAGE ANNUAL GROWTH RATE SINCE		
			1970	1 Year Earlier	3 Months Earlier ²				1970	1 Year Earlier	3 Months Earlier ²
United States	JAN 78	1.0	6.6	7.0	6.1	United Kingdom	JAN 78	0.2	13.5	9.9	6.5
Japan	DEC 77	0	10.1	4.8	2.1	Italy	JAN 78	1.0	13.2	14.5	12.3
West Germany	JAN 78	0.1	5.4	3.2	1.9	Canada	JAN 78	0.5	7.5	9.0	9.8
France	JAN 78	0.3	8.9	9.2	6.7						

²Average for latest 3 months compared with average for previous 3 months, seasonally adjusted at annual rate.

GNP ¹

Constant Market Prices

	Latest Quarter	Percent Change from Previous Quarter	Average Annual Growth Rate Since		
			Percent Change		
			1970	1 Year Earlier	Previous Quarter
United States	77 IV	1.0	3.3	5.7	4.2
Japan	77 III	0.5	5.4	5.2	1.8
West Germany	77 IV	1.3	2.5	1.9	5.3
France	77 III	0.2	3.7	2.3	0.9
United Kingdom	77 III	-0.4	1.6	-0.6	-1.4
Italy	77 III	-2.7	2.3	-1.2	-10.3
Canada	77 III	1.3	4.6	2.5	5.3

¹ Seasonally adjusted.**RETAIL SALES ¹**

Constant Prices

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since		
			Percent Change		
			1970	1 Year Earlier	3 Months Earlier ²
United States	Jan 78	-3.7	2.8	1.6	5.9
Japan	Sep 77	-4.2	9.3	4.1	0.7
West Germany	Jan 78	1.7	2.6	3.4	5.8
France	Nov 77	6.7	-0.6	-3.0	-12.0
United Kingdom	Feb 78	1.5	1.0	2.4	9.7
Italy	Oct 77	-6.8	1.9	-4.0	-11.1
Canada	Nov 77	1.1	4.4	2.7	8.7

¹ Seasonally adjusted.² Average for latest 3 months compared with average for previous 3 months.**FIXED INVESTMENT ¹**

Non-residential; constant prices

	Latest Quarter	Percent Change from Previous Quarter	Average Annual Growth Rate Since		
			Percent Change		
			1970	1 Year Earlier	Previous Quarter
United States	77 IV	2.0	2.3	9.4	8.4
Japan	77 III	-1.1	0.8	0.8	-4.1
West Germany	77 IV	1.6	0.8	2.8	6.7
France	77 III	-0.7	3.4	-0.7	-2.7
United Kingdom	77 III	1.0	1.8	2.8	4.2
Italy	77 III	-12.5	0.4	-10.2	-41.4
Canada	77 III	-1.1	5.8	3.2	-4.2

¹ Seasonally adjusted.**WAGES IN MANUFACTURING ¹**

	Latest Period	Percent Change from Previous Period	Average Annual Growth Rate Since		
			Percent Change		
			1970	1 Year Earlier	3 Months Earlier ²
United States	Jan 78	1.0	7.6	8.2	7.9
Japan	Oct 77	...	16.7	8.3	9.8
West Germany	77 IV	-2.4	8.7	4.6	-9.2
France	77 IV	3.1	14.1	12.0	12.9
United Kingdom	Nov 77	...	14.9	3.4	2.0
Italy	Nov 77	2.9	20.7	23.6	16.3
Canada	Dec 77	0.8	11.2	10.5	7.4

¹ Hourly earnings (seasonally adjusted) for the United States, Japan, and Canada; hourly wage rates for others. West German and French data refer to the beginning of the quarter.² Average for latest 3 months compared with that for previous 3 months.**MONEY MARKET RATES**

				Percent Rate of Interest		
Representative rates		Latest Date		1 Year Earlier	3 Months Earlier	1 Month Earlier
United States	Commercial paper	Mar 15	6.75	4.75	6.64	6.76
Japan	Call money	Mar 17	4.25	6.50	5.25	4.75
West Germany	Interbank loans (3 months)	Mar 15	3.50	4.70	3.80	3.45
France	Call money	Mar 17	10.50	9.94	9.13	10.50
United Kingdom	Sterling interbank loans (3 months)	Mar 15	6.69	10.60	6.74	6.80
Canada	Finance paper	Mar 15	7.49	7.75	7.09	7.12
Eurodollars	Three-month deposits	Mar 15	7.20	5.10	7.00	7.23

EXPORT PRICES

US \$

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since		
			1970	1 Year Earlier	3 Months Earlier
United States	Dec 77	1.1	9.3	3.0	6.2
Japan	Jan 78	-0.7	11.0	11.9	20.0
West Germany	Dec 77	6.3	12.1	11.9	49.6
France	Nov 77	-0.5	11.0	9.0	-3.8
United Kingdom	Feb 78	-0.2	12.1	22.7	33.8
Italy	Oct 77	-0.6	10.9	12.7	0.2
Canada	Nov 77	-0.5	8.4	-3.5	-23.0

EXPORT PRICES

National Currency

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since		
			1970	1 Year Earlier	3 Months Earlier
United States	Dec 77	1.1	9.3	3.0	6.2
Japan	Jan 78	-0.8	5.3	-7.3	-4.2
West Germany	Dec 77	2.1	4.4	1.0	10.2
France	Nov 77	-0.7	9.0	6.1	-7.0
United Kingdom	Feb 78	-0.4	15.3	8.2	3.6
Italy	Oct 77	-0.9	16.3	16.0	-0.7
Canada	Nov 77	0.5	9.3	8.6	-12.7

IMPORT PRICES

National Currency

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since		
			1970	1 Year Earlier	3 Months Earlier
United States	Dec 77	-1.6	12.6	6.1	-3.3
Japan	Jan 78	-3.0	7.6	-18.2	-33.4
West Germany	Dec 77	-1.2	3.8	-1.8	-4.1
France	Nov 77	-0.3	9.8	4.7	-5.3
United Kingdom	Feb 78	0.3	17.7	1.6	-5.4
Italy	Oct 77	-4.3	19.8	10.9	-3.0
Canada	Nov 77	0.6	8.7	15.2	-7.3

OFFICIAL RESERVES

	Latest Month	Billion US \$			
		End of	Jun 1970	1 Year Earlier	3 Months Earlier
		Billion US \$			
United States	Jan 78	19.5	14.5	18.7	19.0
Japan	Jan 78	23.4	4.1	16.5	19.6
West Germany	Jan 78	40.7	8.8	34.4	35.7
France	Oct 77	10.1	4.4	9.6	9.9
United Kingdom	Nov 77	20.7	2.8	5.2	15.0
Italy	Jan 78	11.4	4.7	6.7	11.1
Canada	Feb 78	3.7	4.3	5.3	4.2

CURRENT ACCOUNT BALANCE ¹

	Latest Period	Million US \$	Cumulative (Million US \$)		
			1977	1976	Change
United States ²	77 III	-4,302	-13,064	-48	-13,016
Japan	Jan 78	-223	11,112	3,680	7,432
West Germany	Jan 78	-105	3,584	2,659	926
France	77 IV	136	-3,179	-5,721	2,541
United Kingdom	77 III	916	-691	-1,539	848
Italy	77 III	2,390	1,629	-2,028	3,657
Canada	77 III	-1,150	-4,106	-3,215	-890

¹ Converted to US dollars at the current market rates of exchange.

² Seasonally adjusted.

BASIC BALANCE ¹

Current and Long-Term-Capital Transactions

	Latest Period	Million US \$	Cumulative (Million US \$)		
			1977	1976	Change
United States			No longer published ²		
Japan	Jan 78	-272	7,876	2,696	5,180
West Germany	Jan 78	1,106	-1,648	2,472	-4,120
France	77 IV	149	-3,218	-6,842	3,624
United Kingdom	77 III	2,238	3,995	-1,585	5,581
Italy	77 III	2,520	2,128	-2,083	4,211
Canada	77 III	346	-446	3,239	-3,684

¹ Converted to US dollars at the current market rates of exchange.

² As recommended by the Advisory Committee on the Presentation of Balance of Payments Statistics, the Department of Commerce no longer publishes a basic balance.

EXCHANGE RATES

Spot Rate

As of 17 Mar 78

	US \$ Per Unit	Percent Change from			
		19 Mar 73	1 Year Earlier	3 Months Earlier	10 Mar 78
Japan (yen)	0.0043	14.33	22.69	4.77	2.07
West Germany (Deutsche mark)	0.4909	38.64	17.55	5.06	0.39
France (franc)	0.2144	-2.74	7.04	2.85	4.61
United Kingdom (pound sterling)	1.9070	-22.51	11.00	2.86	0.50
Italy (lira)	0.0012	-33.95	3.45	2.36	0.60
Canada (dollar)	0.8384	-10.96	-6.59	-2.64	-0.27

TRADE-WEIGHTED EXCHANGE RATES ¹

As of 10 Mar 78

	19 Mar 73	Percent Change from		
		1 Year Earlier	3 Months Earlier	3 Mar 78
United States	1.07	-5.33	-1.53	-0.74
Japan	18.61	19.95	4.03	1.82
West Germany	32.84	7.98	1.09	-1.06
France	-11.64	-3.81	-1.40	3.90
United Kingdom	-27.50	4.12	-0.18	-0.57
Italy	-41.85	-6.45	-1.37	-0.86
Canada	-10.90	-8.96	-3.42	-0.54

¹ Weighting is based on each listed country's trade with 16 other industrialized countries to reflect the competitive impact of exchange rate variations among the major currencies.

Developed Countries: Direction of Trade ¹

Billion US \$

	Exports to (f.o.b.)						Imports from (c.i.f.)					
	World	Big Seven	Other OECD	OPEC	Com-munist	Other	World	Big Seven	Other OECD	OPEC	Com-munist	Other
UNITED STATES												
1975	107.65	46.94	16.25	10.77	3.37	29.82	103.42	49.81	8.83	18.70	0.98	25.08
1976	115.01	51.30	17.68	12.57	3.64	29.44	129.57	60.39	9.75	27.17	1.16	31.09
1st Qtr	27.37	12.18	4.11	2.75	1.08	7.24	29.34	13.72	2.40	6.07	0.27	6.88
2d Qtr	29.69	13.38	4.51	3.11	1.01	7.51	31.65	15.36	2.41	6.07	0.28	7.54
3d Qtr	27.43	11.94	4.09	3.11	0.78	7.42	33.74	15.24	2.40	7.55	0.31	8.24
4th Qtr	30.52	13.79	4.97	3.60	0.76	7.26	34.84	16.07	2.55	7.48	0.30	8.44
1977	120.17	53.92	18.53	14.03	2.72	30.97	156.70	70.48	11.08	35.44	1.22	38.48
1st Qtr	29.46	13.75	4.73	3.14	0.86	6.98	37.37	16.07	2.76	8.97	0.30	9.27
2d Qtr	31.67	14.39	4.81	3.69	0.71	8.07	40.45	18.14	2.77	9.31	0.35	9.88
3d Qtr	28.75	12.23	4.39	3.58	0.47	8.08	39.50	17.73	2.78	8.92	0.32	9.75
4th Qtr	30.29	13.55	4.60	3.62	0.68	7.84	39.38	18.54	2.77	8.24	0.25	9.58
JAPAN												
1975	55.73	16.56	6.07	8.42	5.16	15.87	57.85	16.93	6.08	19.40	3.36	12.05
1976	67.32	22.61	8.59	9.27	4.93	17.84	64.89	17.58	7.78	21.88	2.91	14.72
1st Qtr	14.44	4.89	1.83	1.87	1.28	3.76	14.84	4.09	1.70	5.22	0.67	3.16
2d Qtr	16.42	5.46	2.09	2.27	1.32	4.39	15.89	4.35	1.95	5.40	0.66	3.54
3d Qtr	17.54	5.95	2.27	2.47	1.09	4.52	16.81	4.51	2.14	5.41	0.74	4.01
4th Qtr	18.92	6.30	2.40	2.66	1.24	5.17	17.34	4.62	2.00	5.86	0.84	4.01
1977												
1st Qtr	17.89	5.89	2.45	2.46	1.36	5.73	17.44	4.72	1.84	6.24	0.79	3.85
2d Qtr	19.73	6.73	2.41	2.91	1.19	6.49	17.88	4.88	2.10	5.74	0.86	4.30
3d Qtr	20.63	7.40	2.47	3.05	1.33	6.38	17.63	4.68	1.84	5.88	0.84	4.39
Oct & Nov	14.26	4.93	1.56	2.21	0.94	4.62	11.98	3.00	1.36	4.17	0.59	2.86
WEST GERMANY												
1975	91.70	28.33	36.44	6.78	8.81	11.05	76.28	27.09	27.78	8.24	4.87	8.21
1976	103.63	33.44	41.86	8.25	8.72	11.04	89.68	31.28	32.64	9.73	5.93	10.01
1st Qtr	23.79	7.92	9.54	1.71	2.09	2.47	20.49	7.13	7.59	2.19	1.33	2.23
2d Qtr	24.96	8.21	10.12	1.84	2.08	2.64	21.94	7.70	8.13	2.22	1.43	2.42
3d Qtr	25.53	8.00	10.28	2.24	2.13	2.78	22.14	7.56	7.89	2.57	1.49	2.58
4th Qtr	29.35	9.31	11.92	2.46	2.42	3.15	25.12	8.88	9.03	2.73	1.67	2.78
1977												
1st Qtr	28.19	9.28	11.62	2.31	2.11	2.87	24.45	8.46	8.85	2.58	1.42	3.14
2d Qtr	29.20	9.59	11.79	2.69	2.07	3.06	25.21	9.09	9.04	2.43	1.54	3.11
3d Qtr	28.75	9.20	11.45	2.71	2.26	3.13	25.27	8.99	8.97	2.54	1.65	3.12
Oct & Nov	21.32	7.13	8.65	1.90	1.24	2.40	17.85	6.35	6.79	1.65	0.96	2.10
FRANCE												
1975	52.87	20.00	15.50	4.90	3.13	8.61	53.99	23.04	14.33	9.43	1.94	5.21
1976	57.05	22.49	16.15	5.08	3.23	8.75	64.38	27.81	16.93	11.36	2.24	6.01
1st Qtr	13.97	5.52	3.93	1.24	0.84	2.08	15.52	6.57	4.16	2.82	0.56	1.42
2d Qtr	15.02	5.91	4.41	1.22	0.98	2.23	16.19	7.15	4.33	2.61	0.55	1.53
3d Qtr	12.81	4.97	3.49	1.29	0.67	2.09	14.97	6.49	3.77	2.75	0.55	1.41
4th Qtr	15.26	6.08	4.33	1.33	0.75	2.35	17.70	7.60	4.68	3.19	0.58	1.65
1977												
1st Qtr	15.68	6.25	4.55	1.39	0.75	2.74	17.89	7.50	4.84	3.06	0.52	1.97
2d Qtr	16.69	6.60	4.79	1.57	0.83	2.90	17.96	7.84	4.71	2.65	0.61	2.15
3d Qtr	14.75	6.02	4.08	1.32	0.67	2.66	16.14	6.99	3.85	2.87	0.62	1.81
Oct & Nov	11.45	4.60	3.13	0.99	0.41	2.32	12.11	5.25	3.12	2.10	0.46	1.18
UNITED KINGDOM												
1975	44.03	12.55	16.59	4.55	1.56	8.64	53.35	18.47	18.52	6.91	1.68	7.67
1976	46.12	14.03	17.53	5.13	1.39	7.92	55.56	19.66	18.81	7.29	2.08	7.65
1st Qtr	11.60	3.41	4.37	1.24	0.38	2.17	13.50	4.69	4.64	1.82	0.49	1.83
2d Qtr	11.46	3.53	4.32	1.26	0.37	1.95	13.96	5.04	4.57	1.74	0.56	2.03
3d Qtr	11.03	3.43	4.11	1.26	0.32	1.87	13.69	4.75	4.54	1.89	0.51	1.98
4th Qtr	12.03	3.64	4.74	1.38	0.31	1.93	14.41	5.17	5.06	1.84	0.51	1.81

Developed Countries: Direction of Trade ¹
(Continued)

Billion US \$

	Exports to (f.o.b.)						Imports from (c.i.f.)					
	World	Big Seven	Other OECD	OPEC	Com-munist	Other	World	Big Seven	Other OECD	OPEC	Com-munist	Other
UNITED KINGDOM												
(Continued)												
1977	57.44	16.99	22.56	6.79	1.63	9.47	63.29	24.02	21.34	6.31	2.40	9.22
1st Qtr	13.14	4.02	5.16	1.52	0.35	2.09	15.45	5.80	5.12	1.78	0.49	2.26
2d Qtr	14.35	4.20	5.72	1.69	0.44	2.30	16.52	6.02	5.73	1.70	0.58	2.49
3d Qtr	14.59	4.47	5.55	1.75	0.46	2.36	15.20	6.05	4.74	1.44	0.66	2.31
4th Qtr	15.36	4.30	6.13	1.83	0.38	2.72	16.12	6.15	5.75	1.39	0.67	2.16
ITALY												
1975	34.82	15.61	7.86	3.72	2.46	4.67	38.36	17.32	6.75	7.85	2.09	4.34
1976	36.96	17.41	8.69	4.23	2.18	3.96	43.42	19.35	8.04	8.12	2.65	5.24
1st Qtr	8.01	3.80	1.86	0.83	0.53	0.87	9.77	4.37	1.83	1.82	0.54	1.21
2d Qtr	8.85	4.22	2.09	0.97	0.52	0.95	10.83	4.85	1.94	2.10	0.63	1.31
3d Qtr	9.45	4.51	2.22	1.07	0.53	0.99	10.33	4.51	1.85	2.03	0.67	1.26
4th Qtr	10.65	4.88	2.53	1.36	0.59	1.14	12.49	5.62	2.42	2.17	0.81	1.46
1977												
1st Qtr	9.80	4.56	2.30	1.26	0.53	1.15	11.37	5.00	2.14	2.18	0.60	1.45
2d Qtr	11.47	5.33	2.61	1.51	0.60	1.42	12.49	5.51	2.24	2.50	0.64	1.60
3d Qtr	10.93	5.01	2.51	1.41	0.63	1.37	10.55	4.39	1.80	2.10	0.73	1.53
Oct	3.72	1.76	0.81	0.48	0.20	0.47	4.25	1.92	0.78	0.66	0.28	0.61
CANADA												
1975	33.84	26.30	1.73	0.71	1.20	2.00	38.59	29.78	1.70	3.43	0.32	2.02
1976	40.18	32.01	2.03	0.81	1.25	2.09	43.05	33.55	1.82	3.48	0.38	2.56
1st Qtr	9.18	7.39	0.43	0.47	0.33	0.42	10.40	8.05	0.42	0.95	0.09	0.59
2d Qtr	10.75	8.61	0.50	0.18	0.34	0.56	11.61	9.02	0.45	1.02	0.10	0.70
3d Qtr	9.94	7.74	0.56	0.20	0.35	0.53	10.12	7.75	0.47	0.80	0.10	0.69
4th Qtr	10.31	8.27	0.55	0.26	0.23	0.58	10.91	8.73	0.48	0.71	0.09	0.58
1977												
1st Qtr	10.35	8.37	0.53	0.23	0.22	1.00	10.92	8.64	0.43	0.82	0.09	0.94
2d Qtr	11.34	9.23	0.54	0.24	0.29	1.04	12.28	9.92	0.47	0.74	0.10	1.05
3d Qtr	10.25	8.12	0.54	0.23	0.29	1.07	10.38	8.17	0.43	0.82	0.07	0.89
Oct	3.80	3.10	0.19	0.09	0.06	0.36	3.82	3.11	0.14	0.21	0.02	0.34

¹ Source: International Monetary Fund, Direction of Trade.

FOREIGN TRADE BILLION US \$, f.o.b., seasonally adjusted

United States

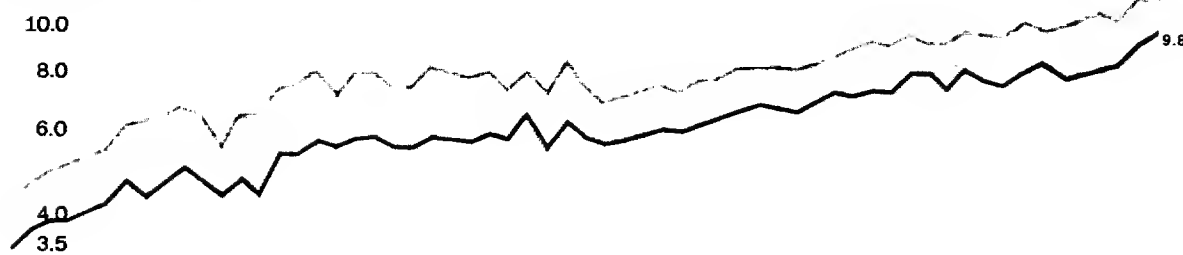
Semit logarithmic Scale



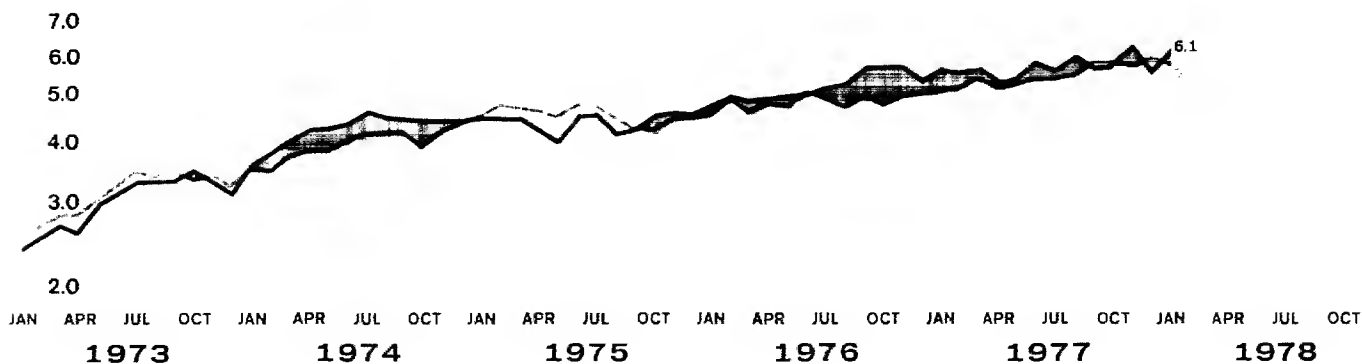
Japan



West Germany

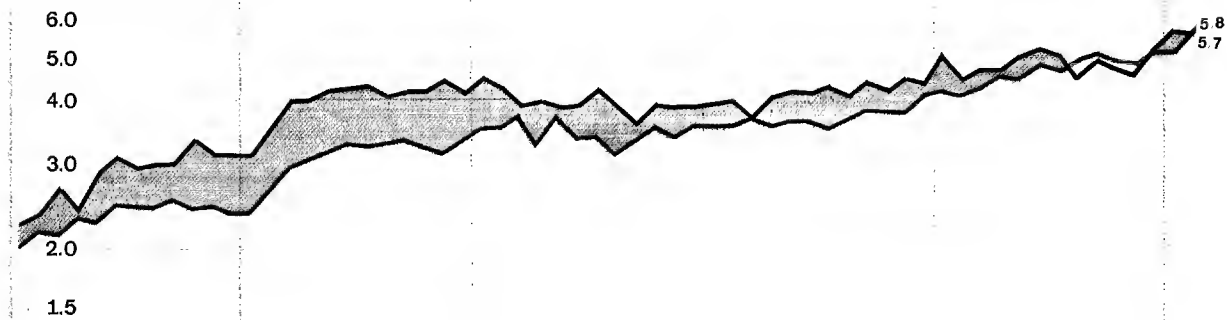


France



United Kingdom

Semilogarithmic Scale



Italy



Canada



JAN 1973 APR JUL OCT JAN 1974 APR JUL OCT JAN 1975 APR JUL OCT JAN 1976 APR JUL OCT JAN 1977 APR JUL OCT JAN 1978 APR JUL OCT

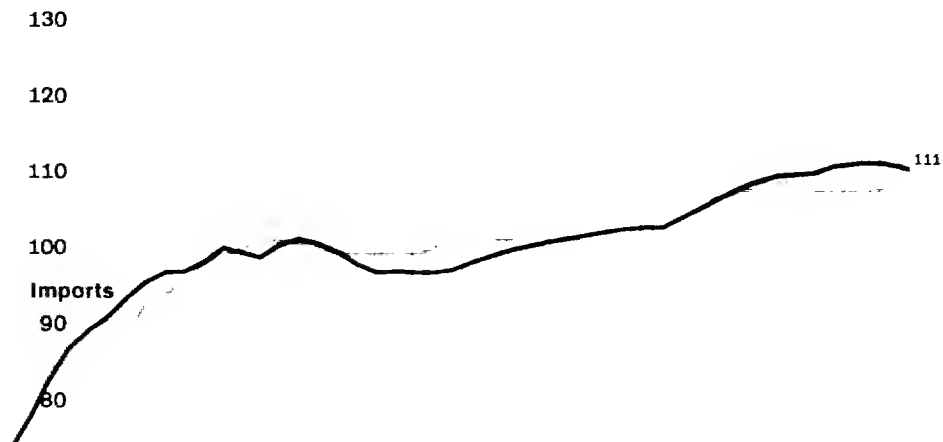
	LATEST MONTH	MILLION US \$	CUMULATIVE (MILLION US \$)				LATEST MONTH	MILLION US \$	CUMULATIVE (MILLION US \$)		
			1977	1976	CHANGE				1977	1976	CHANGE
United States	JAN 78	10,014	121,206	114,860	5.5%	United Kingdom	FEB 78	5,819	56,132	44,643	25.7%
		<u>12,393</u>	<u>147,696</u>	<u>120,495</u>	<u>22.6%</u>			<u>5,656</u>	<u>59,024</u>	<u>51,108</u>	<u>15.5%</u>
	Balance	-2,379	-26,490	-5,635	-20,855		Balance	163	-2,892	-6,465	3,573
Japan	JAN 78	7,697	79,212	65,751	20.5%	Italy	DEC 77	4,555	45,007	37,957	18.6%
		<u>5,809</u>	<u>61,752</u>	<u>56,004</u>	<u>10.3%</u>			<u>4,173</u>	<u>44,132</u>	<u>40,025</u>	<u>10.3%</u>
	Balance	1,887	17,460	9,747	7,713		Balance	382	876	-2,068	2,944
West Germany	JAN 78	11,133	117,787	101,923	15.6%	Canada	JAN 78	3,202	42,035	38,355	9.6%
		<u>9,818</u>	<u>96,533</u>	<u>83,574</u>	<u>15.5%</u>			<u>2,932</u>	<u>39,189</u>	<u>37,255</u>	<u>5.2%</u>
	Balance	1,315	21,254	18,349	2,905		Balance	271	2,846	1,100	1,746
France	JAN 78	5,690	65,087	56,967	14.3%						
		<u>6,083</u>	<u>67,389</u>	<u>61,068</u>	<u>10.4%</u>						
	Balance	-393	-2,302	-4,101	1,799						

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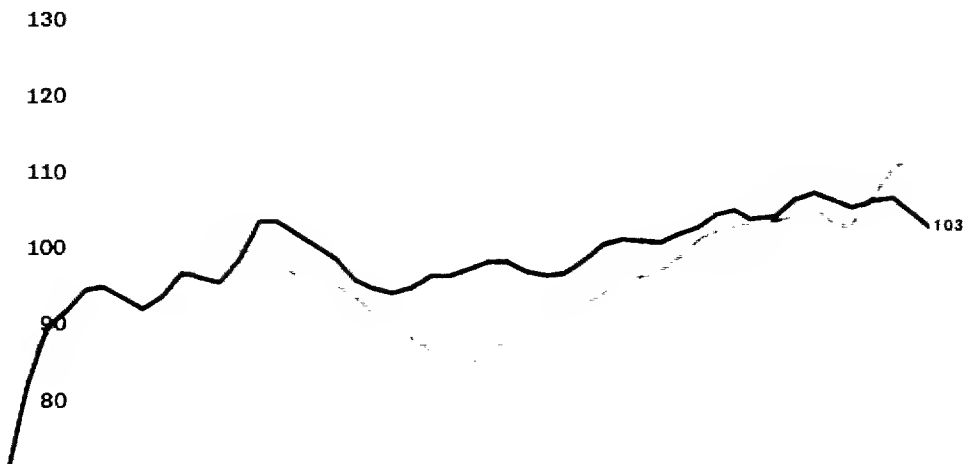
FOREIGN TRADE PRICES IN US \$¹

United States

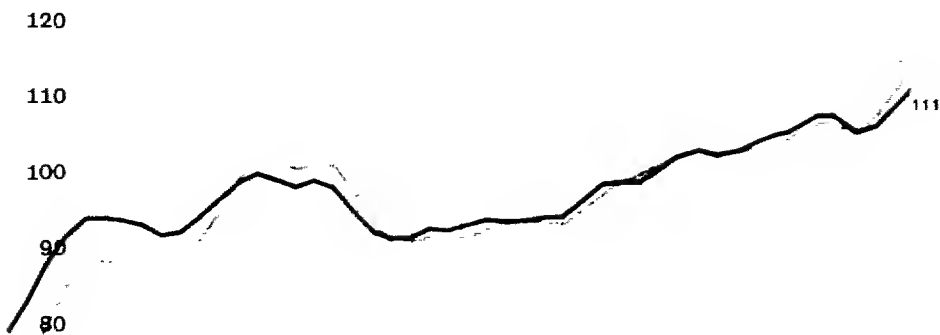
INDEX: JAN 1975 = 100



Japan



West Germany



JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT JAN APR JUL OCT

1974

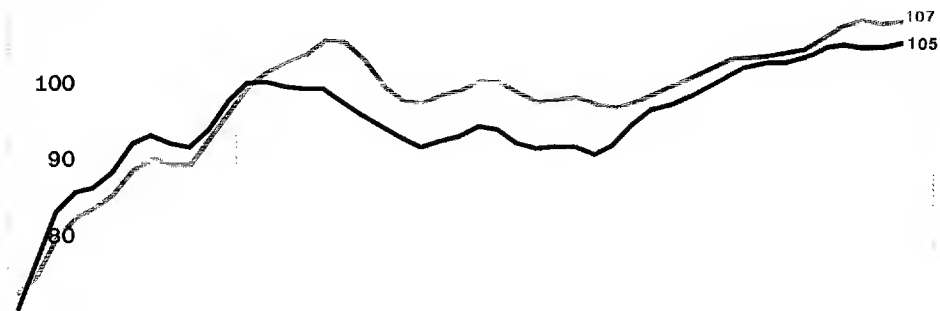
1975

1976

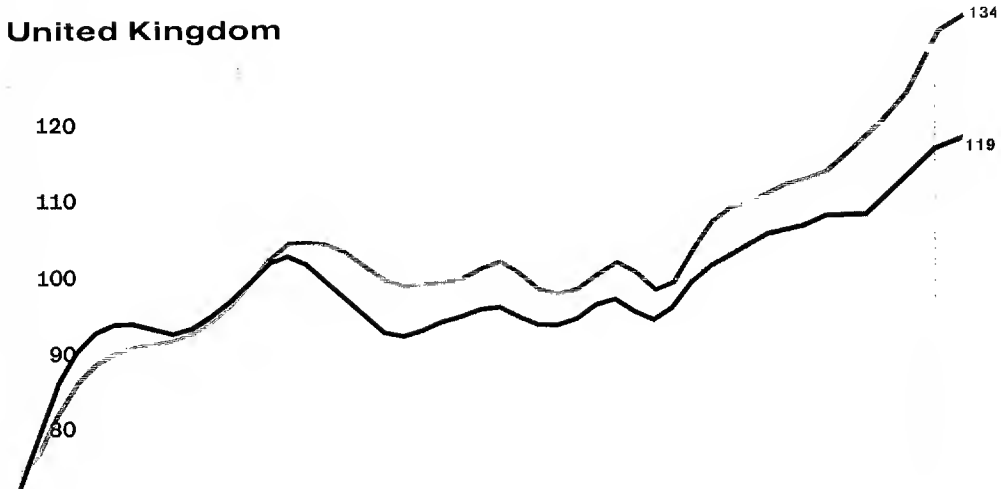
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1978

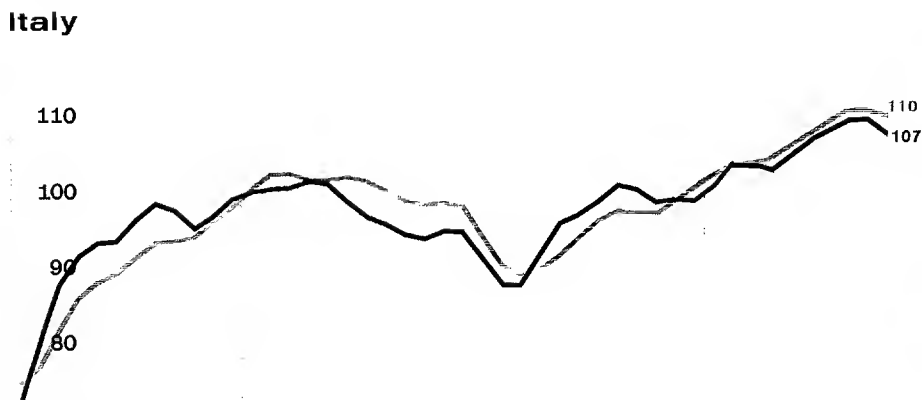
France



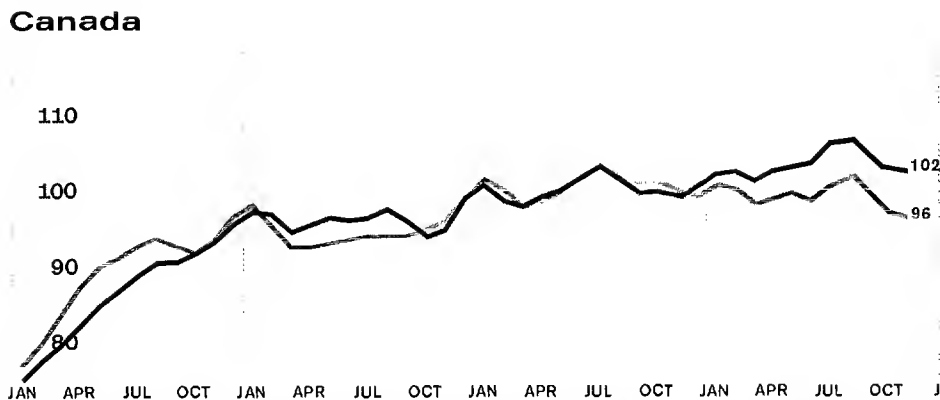
United Kingdom



Italy



Canada



SELECTED DEVELOPING COUNTRIES

INDUSTRIAL PRODUCTION ¹

	Latest Period	Percent Change from Previous Period	Average Annual Growth Rate Since		
			Percent Change		
			1970	1 Year Earlier	3 Months Earlier ²
India	Oct 77	0.3	4.6	7.8	-0.4
South Korea	Nov 77	0.3	21.9	13.9	9.2
Mexico	Sep 77	0.2	6.0	5.3	11.2
Nigeria	76 IV	0.2	11.3	9.0	0.7
Taiwan	Jan 78	15.5	17.2	25.4	56.8

¹ Seasonally adjusted.² Average for latest 3 months compared with average for previous 3 months.MONEY SUPPLY ¹

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since		
			Percent Change		
			1970	1 Year Earlier	3 Months Earlier ¹
Brazil	Oct 77	2.9	37.1	47.4	42.2
India	Oct 77	1.6	13.6	15.2	23.1
Iran	Nov 77	-2.0	27.6	18.2	17.4
South Korea	Nov 77	-3.5	31.5	43.9	42.6
Mexico	Oct 77	4.9	19.5	26.6	21.9
Nigeria	Apr 77	-2.3	36.9	47.5	99.7
Taiwan	Oct 77	3.2	24.8	29.1	30.6
Thailand	Jul 77	2.7	13.5	14.7	12.4

¹ Seasonally adjusted.² Average for latest 3 months compared with average for previous 3 months.

CONSUMER PRICES

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since	
			Percent Change	
			1970	1 Year Earlier
Brazil	Feb 78	3.6	27.7	39.7
India	Dec 77	...	8.1	7.8
Iran	Dec 77	0.6	12.1	22.3
South Korea	Dec 77	0.9	14.1	11.0
Mexico	Nov 77	1.1	14.9	22.0
Nigeria	Aug 77	3.4	16.8	29.3
Taiwan	Jan 78	-42.3	2.2	-38.7
Thailand	Dec 77	-0.4	8.4	8.8

WHOLESALE PRICES

	Latest Month	Percent Change from Previous Month	Average Annual Growth Rate Since	
			Percent Change	
			1970	1 Year Earlier
Brazil	Dec 77	2.1	27.3	35.3
India	Jan 78	-0.3	8.5	3.0
Iran	Dec 77	0.3	10.2	10.3
South Korea	Dec 77	1.4	16.0	10.1
Mexico	Nov 77	...	16.1	23.1
Taiwan	Jan 78	-43.7	0.4	-42.7
Thailand	Oct 77	-1.2	9.7	5.5

EXPORT PRICES

US \$

	Latest Period	Percent Change from Previous Period	Average Annual Growth Rate Since	
			Percent Change	
			1970	1 Year Earlier
Brazil	Oct 77	-2.8	12.7	2.1
India	Mar 77	-0.9	9.6	17.9
Iran	Dec 77	...	33.1	9.9
South Korea	77 III	0.9	8.6	6.5
Nigeria	May 76	-0.1	27.3	12.3
Taiwan	Nov 77	1.0	11.9	8.6
Thailand	Dec 76	2.0	13.3	13.1

OFFICIAL RESERVES

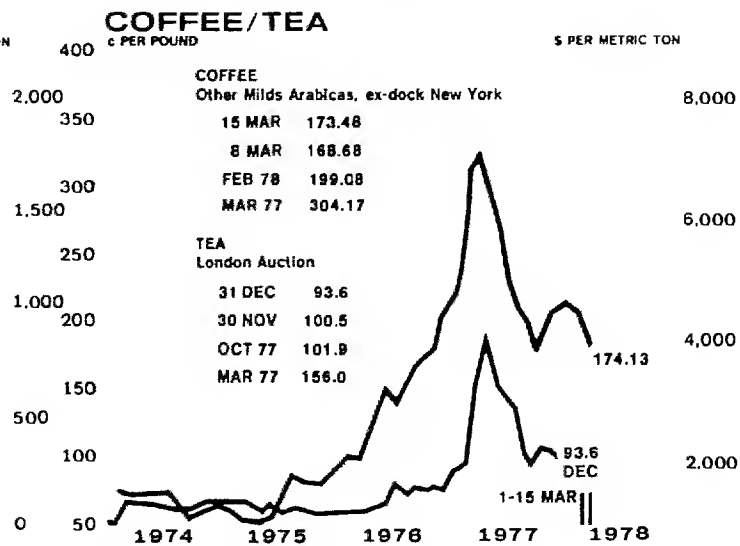
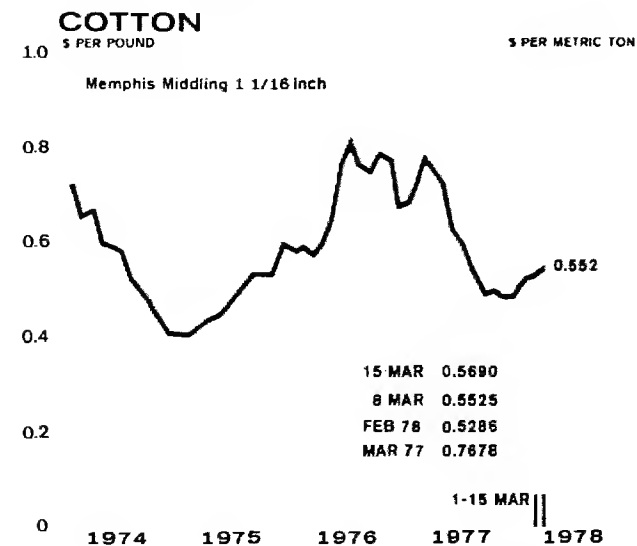
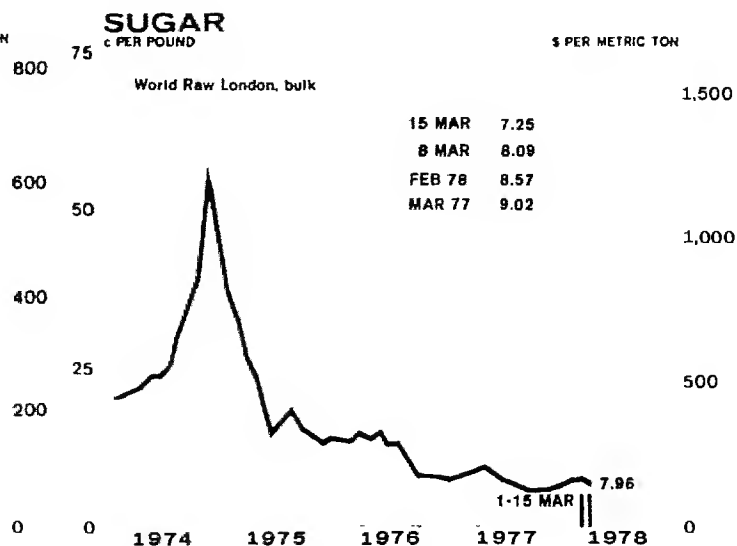
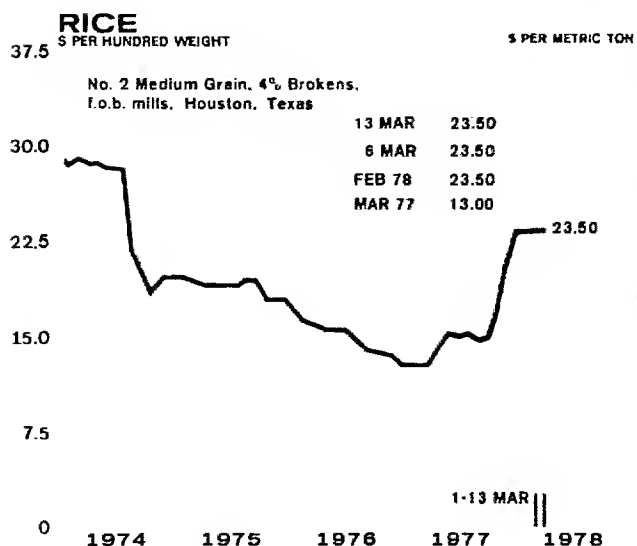
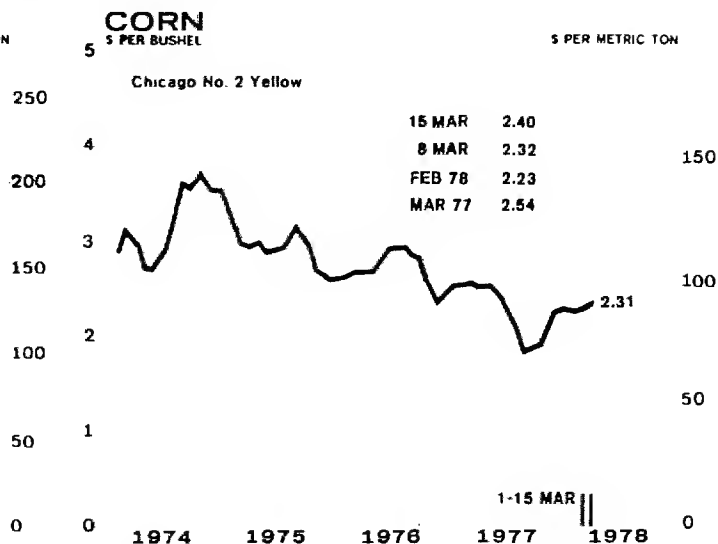
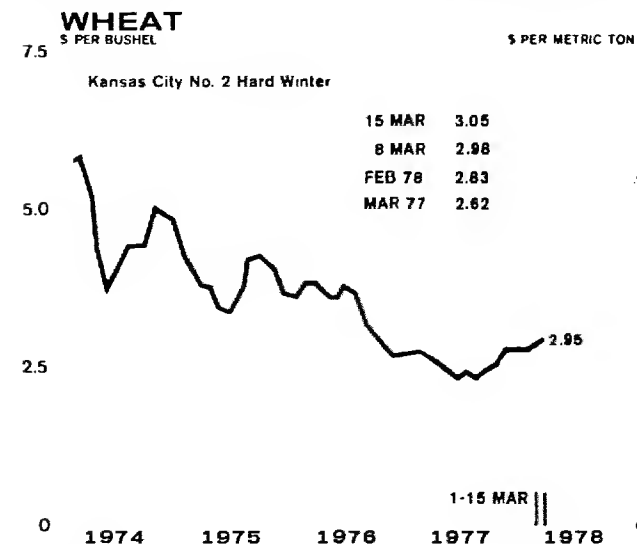
	Latest Month		Million US \$		
	End of	Million US \$	Jun 1970	1 Year	3 Months
				Earlier	Earlier
Brazil	Oct 77	6,041	1,013	5,007	6,144
India	Nov 77	5,069	1,006	3,003	4,525
Iran	Jan 78	12,848	208	8,965	11,546
South Korea	Dec 77	4,307	602	2,961	4,040
Mexico	Mar 76	1,501	695	1,479	1,533
Nigeria	Jan 78	3,900	148	4,738	4,551
Taiwan	Dec 77	1,448	531	1,607	1,442
Thailand	Jan 78	1,950	978	1,885	1,906

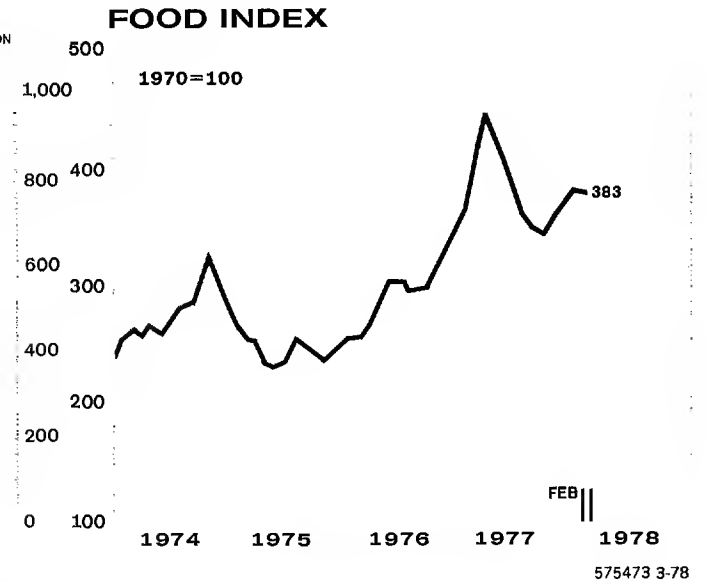
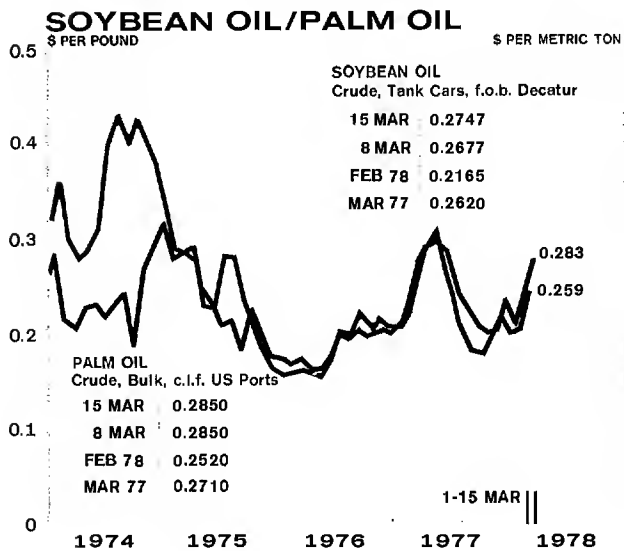
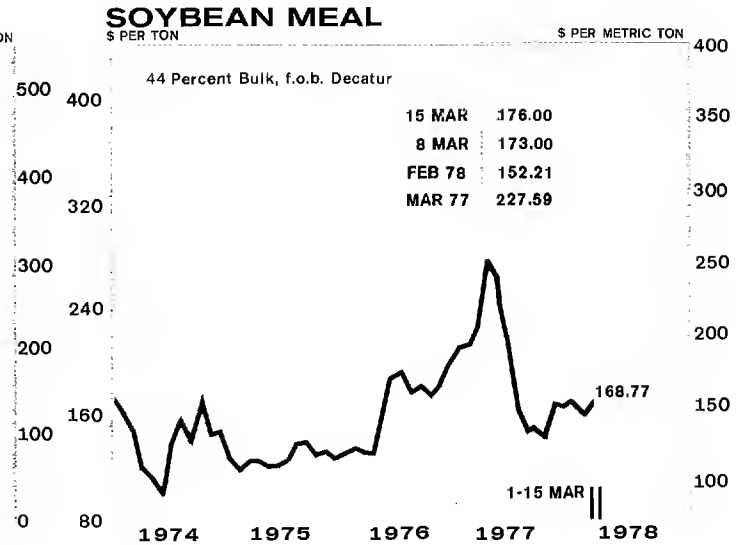
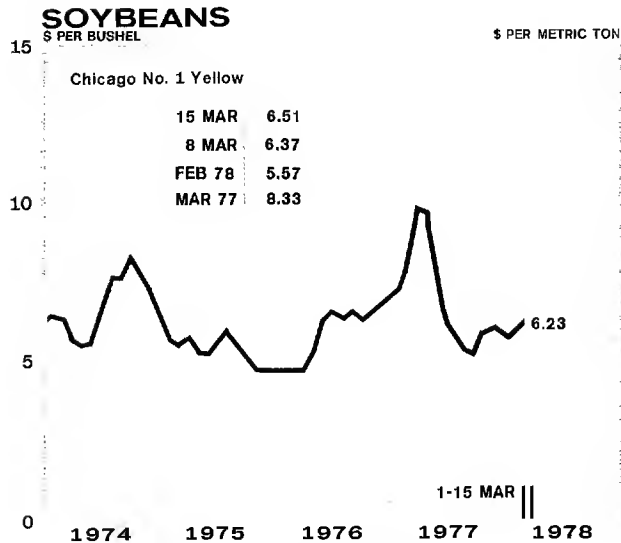
FOREIGN TRADE, f.o.b.

			Latest 3 Months Percent Change from		Cumulative (Million US \$)		
Latest Period			3 Months Earlier ¹	1 Year Earlier 1977	1976	Change	
Brazil	Jon 78	Exports	-22.3	-4.9	12,137	10,128	19.8%
	Jon 78	Imports	-15.2	-4.6	11,999	12,346	-2.8%
	Jan 78	Balance			138	-2,218	2,356
India	Nov 77	Exports	-57.2	-5.4	5,313	4,618	15.1%
	Nov 77	Imports	87.9	26.6	4,760	4,098	16.2%
	Nov 77	Balance			553	520	33
Iran	Nov 77	Exports	64.9	-2.4	21,876	21,093	3.7%
	Nov 77	Imports	-1.0	5.9	11,537	10,815	6.7%
	Nov 77	Balance			10,339	10,278	60
South Korea	Nov 77	Exports	-17.0	20.8	8,687	6,882	26.2%
	Nov 77	Imports	-5.4	22.5	8,773	7,169	22.4%
	Nov 77	Balance			-86	-287	201
Mexico	Oct 77	Exports	-29.0	34.3	3,367	2,573	30.9%
	Oct 77	Imports	70.1	8.3	4,189	4,838	-13.4%
	Oct 77	Balance			-822	-2,266	1,443
Nigeria	Nov 77	Exports	-25.5	13.4	4,384	3,620	21.1%
	Dec 76	Imports	86.7	8.4	N.A.	N.A.	N.A.
	Dec 76	Balance			N.A.	N.A.	N.A.
Taiwan	Jon 78	Exports	68.3	22.2	9,361	8,166	14.6%
	Jon 78	Imports	87.5	17.0	8,511	7,599	12.0%
	Jan 78	Balance			850	567	283
Thailand	Oct 77	Exports	-21.8	9.3	2,925	2,424	20.7%
	Nov 77	Imports	-15.3	25.7	3,809	2,956	28.9%
	Oct 77	Balance			-534	-234	-300

¹ At annual rates.

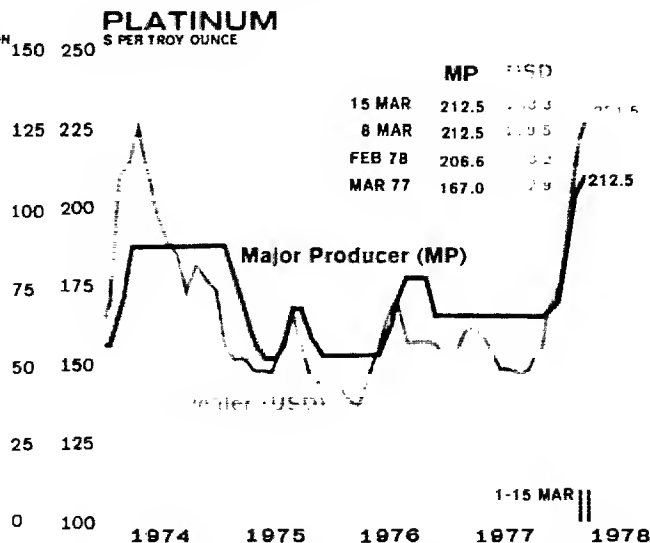
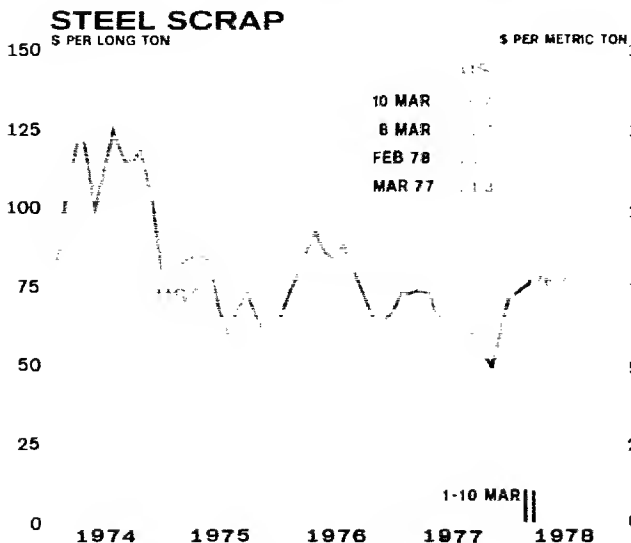
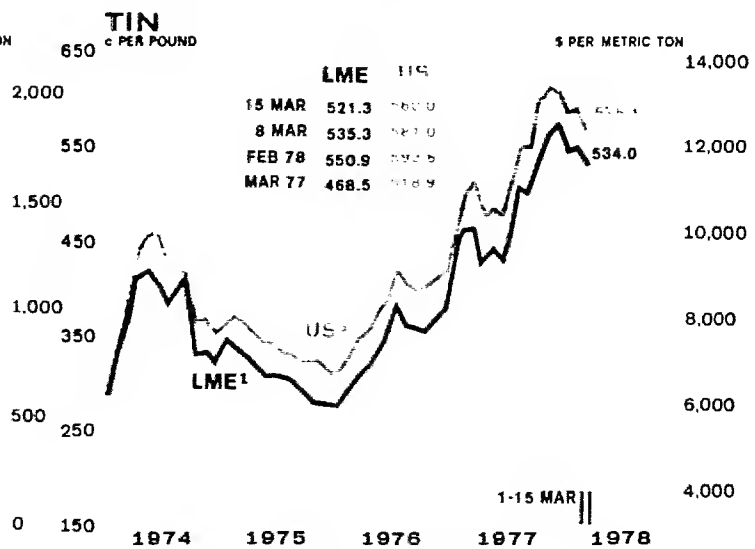
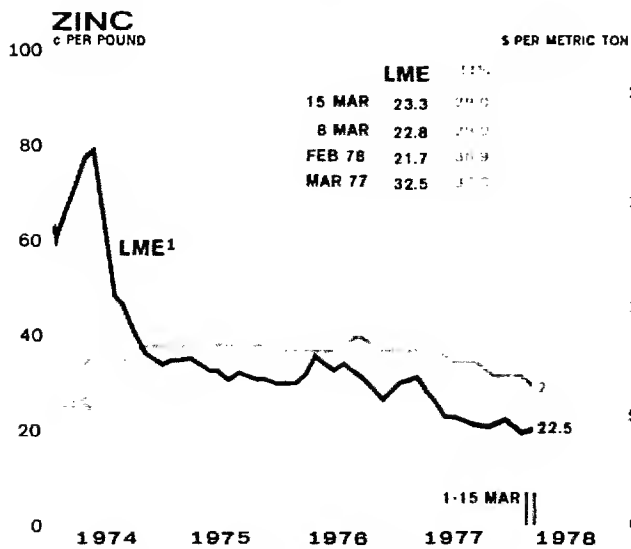
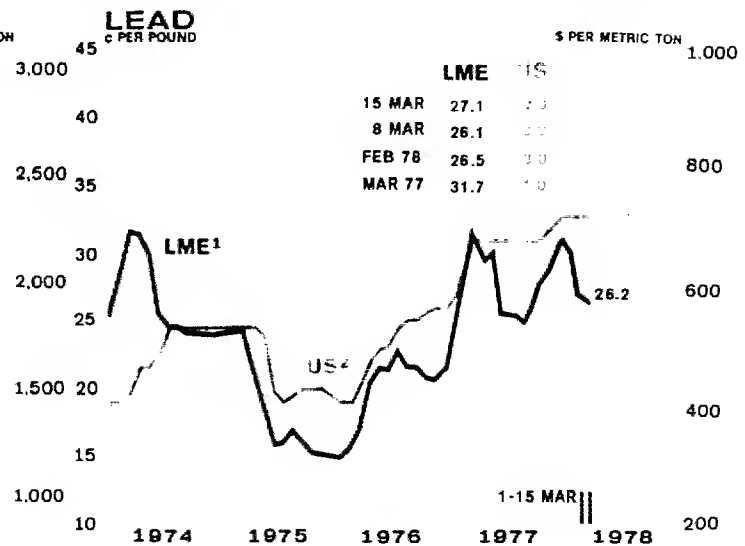
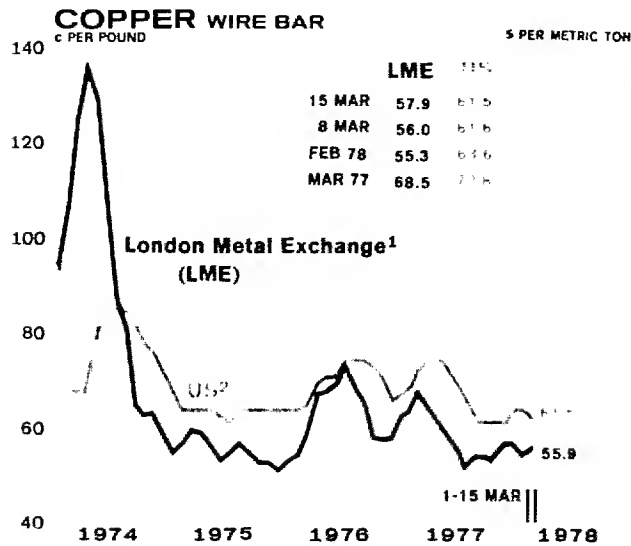
AGRICULTURAL PRICES MONTHLY AVERAGE CASH PRICE





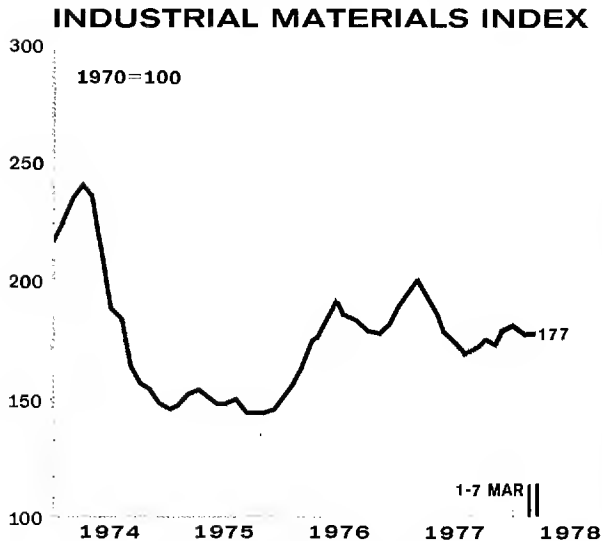
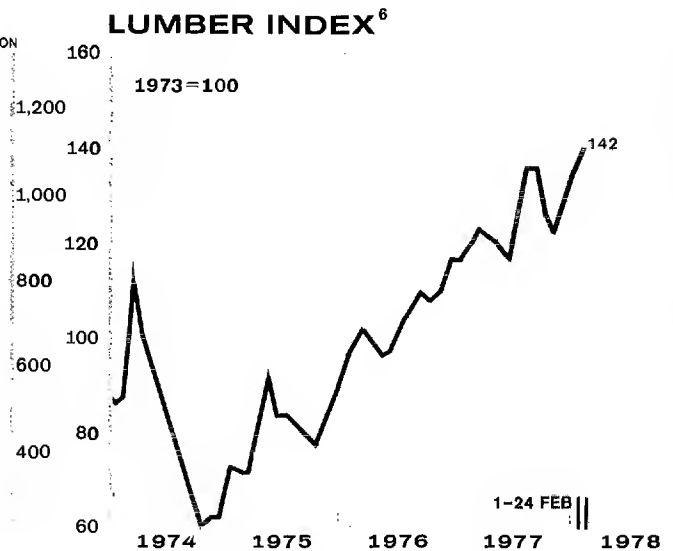
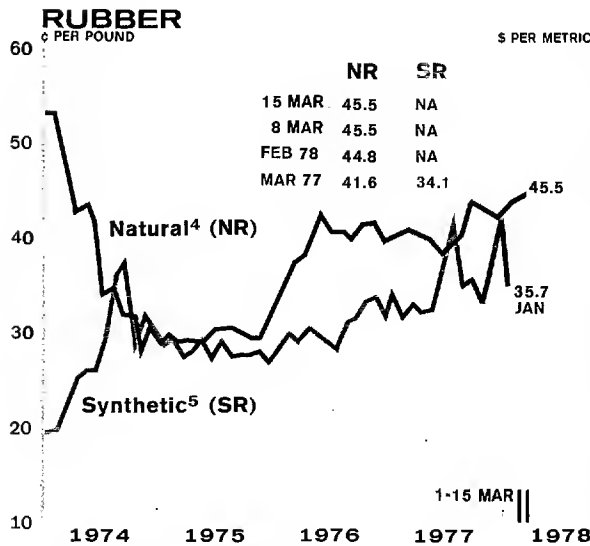
NOTE: The food index is compiled by the *Economist* for 16 food commodities which enter international trade. Commodities are weighted by 3-year moving averages of imports into industrialized countries.

INDUSTRIAL MATERIALS PRICES MONTHLY AVERAGE CASH PRICE



SELECTED MATERIALS

			CURRENT	AUG 77	FEB 77	FEB 76
ALUMINUM	Major US Producer	¢ per pound	53.00	53.00	49.17	41.00
US STEEL	Composite	\$ per long ton	389.60	359.36	339.27	306.72
IRON ORE	Non-Bessemer Old Range	\$ per long ton	21.43	21.43	21.43	19.12
CHROME ORE	Russian, Metallurgical Grade	\$ per metric ton	NA	150.00	150.00	150.00
CHROME ORE	S. Africa, Chemical Grade	\$ per long ton	56.00	58.50	58.50	39.00
FERROCHROME	US Producer, 66-70 Percent	¢ per pound	41.00	41.00	43.00	45.00
NICKEL	Composite US Producer	\$ per pound	2.07	2.16	2.41	2.20
MANGANESE ORE	48 Percent Mn	\$ per long ton	72.24	72.26	72.00	68.45
TUNGSTEN ORE	Contained Metal	\$ per metric ton	18,978.56	19,494.00	22,528.00	12,078.00
MERCURY	New York	\$ per 76 pound flask	153.00	124.29	173.20	127.39
SILVER	LME Cash	¢ per troy ounce	519.10	453.91	486.01	419.73
GOLD	London Afternoon Fixing Price	\$ per troy ounce	188.97	149.52	148.23	132.58



¹Approximates world market price frequently used by major world producers and traders, although only small quantities of these metals are actually traded on the LME.

²Producers' price, covers most primary metals sold in the US.

³As of 1 Dec 75, US tin price quoted is "Tin NY 1b composite."

⁴Quoted on New York market.

⁵S-type styrene, US export price.

⁶This index is compiled by using the average of 13 types of lumber whose prices are regarded as bellwethers of US lumber construction costs.


⁷Composite price for Chicago, Philadelphia, and Pittsburgh.

NOTE: The industrial materials index is compiled by the *Economist* for 19 raw materials which enter international trade. Commodities are weighted by 3-year moving averages of imports into industrialized countries.

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